MAY 1951

ARCHITECTURAL RECORD





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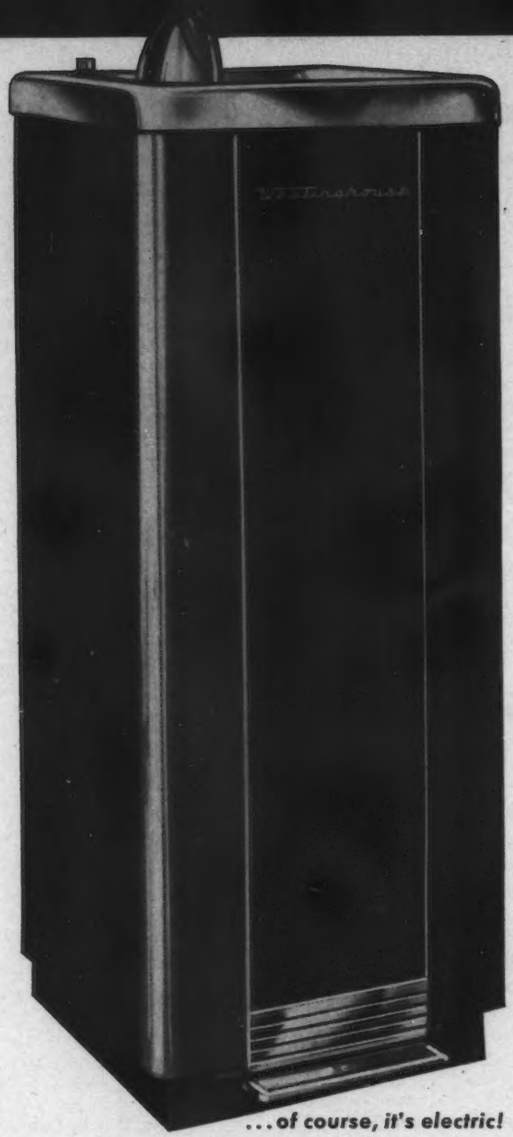
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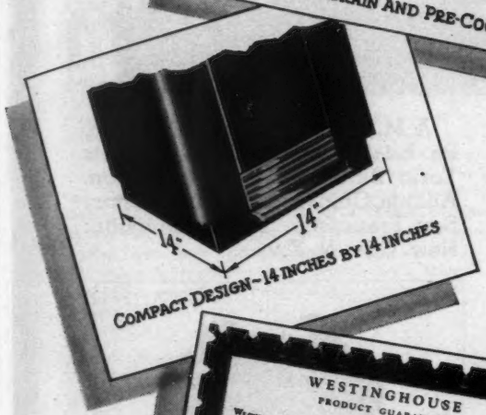
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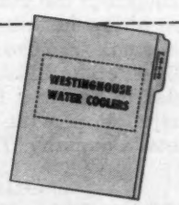
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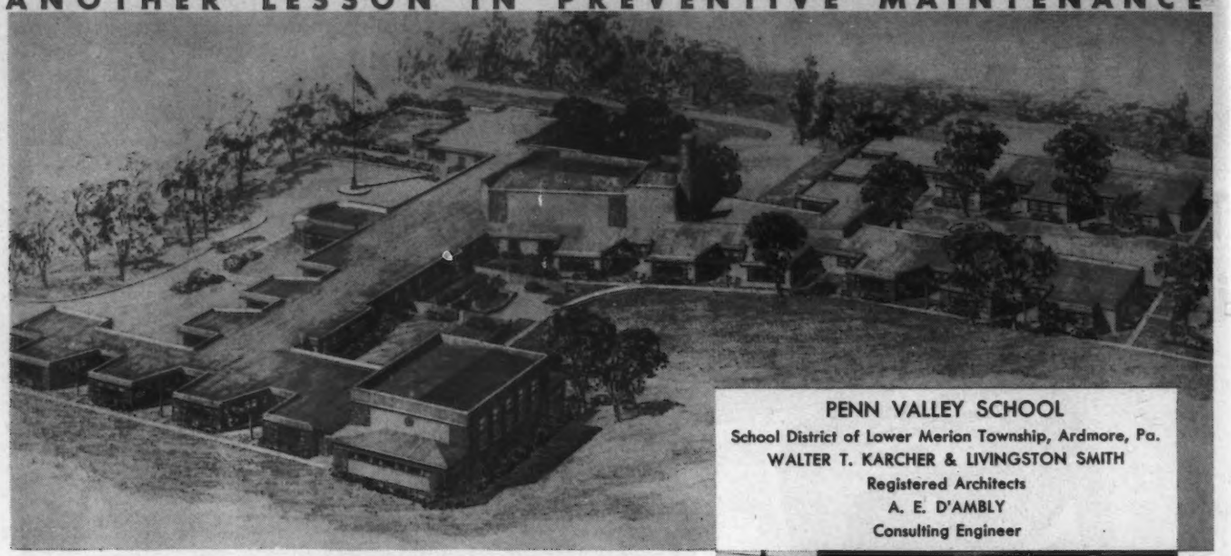
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ANOTHER LESSON IN PREVENTIVE MAINTENANCE



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School District of Lower Merion Township, Ardmore, Pa.
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Consulting Engineer



BYERS WROUGHT IRON PIPE

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RADIANT HEATING INSTALLATION

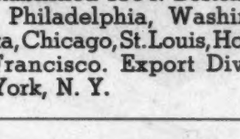
To heat the seven-eighths of a mile of interconnected buildings that comprise this new $1,500,000 school, the designers applied modern and functional principles, so apparent in the architectural design, to the heating system with a combination of radiant heating and tempered fresh air. To safeguard the heating installation against excessive maintenance and premature failure, they followed sound, proven practice by specifying wrought iron for the underfloor coils.

One inch Byers Wrought Iron pipe was imbedded in the concrete floor of this extensive one-story, basementless structure. Hot water, with an antifreeze solution, circulated through these pipes, heats the floor which radiates warmth throughout the class rooms. A portion of the installation is shown in the small picture. The pipe was fabricated and installed by Willard Sales & Service, Inc., working in conjunction with National Sheet Metal Company. The latter organization installed the supply ventilation system, under thermostatic control, which provides a dual system of comfort conditioning for the class rooms.

Radiant heating has rolled up an impressive record as an ideal heating system for schools. Byers Wrought Iron pipe is the first choice of experienced engineers for this service because of its unusual combination of advantages. It is readily formed and welded which speeds and simplifies installation. Its emission rate is high. It expands and contracts at practically identical rates with concrete and plaster, and so can be safely imbedded in these materials. It has ample mechanical strength to withstand damage during installation periods. And its corrosion resistance under similar operation conditions has been demonstrated in hundreds of installations, over periods of many years.

Ask for our bulletin, BYERS WROUGHT IRON FOR RADIANT HEATING for the complete story.

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ARCHITECTURAL RECORD

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IN THIS desert home at Palm Springs, California, Kaiser Aluminum corrugated roofing is used in the living room ceiling to diffuse sound and carry the attractive exterior corrugation design inside the house. The corrugations deflect and hinder movement of sound waves.



KAISER ALUMINUM corrugated roofing is used on wing walls to reflect heat from patios and to provide wind shelter. Horizontal corrugations blend with the roof design to give a lower, wider effect.

KAISER ALUMINUM ROOFING helps keep interiors cooler during hot days by reflecting up to 60 per cent of the sun's rays. At night, when desert temperatures fall, the aluminum helps retain interior warmth to give this beautiful home a more uniform temperature over each 24-hour period.



ARCHITECTS: Clark and Frey, Palm Springs.

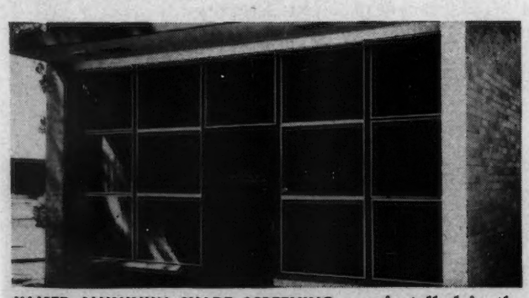
KEEP ALUMINUM IN YOUR PLANS



KAISER ALUMINUM SIDING is used for fire-resistant curtain walls in R. H. Macy's San Francisco store. In several instances siding was locked together but most often was set vertically at an angle several inches apart to permit circulation of air. The lightweight panels permit overnight remodeling. Architects: Gruen & Krummeck, San Francisco.



DUCTWORK MADE OF Kaiser Aluminum cut installation and fuel costs in this Richland, Washington, housing project. Architects and engineers J. Fletcher Lankton-John N. Ziegele, Peoria, Ill., decided on Kaiser Aluminum because, uninsulated, it delivers as much heat as insulated galvanized material. Aluminum's lightness enabled crews to install units faster, with less worker fatigue.



KAISER ALUMINUM SHADE SCREENING was installed in the doors and windows of this medical office to lower interior temperatures on hot days, and enhance the beauty of the exterior. Tiny louvers block sun's heat rays, but admit comfortable, glareless light. Additional benefits: Privacy, an effective insect barrier, protection from fading.

KAISER ALUMINUM is now helping to meet the critical demands of national security, but a limited amount of some aluminum building materials is still available.

We suggest you check with your sources of supply before deciding upon any substitute material.

When you are planning for defense purposes and have government approval, aluminum building materials will usually be available in the quantities required.

What about the future for aluminum building materials?

Kaiser Aluminum has started work on new facilities that will increase its production by 80 per cent. As soon as possible, this additional aluminum will be shared by the building industry for civilian uses.

This prospect for a plentiful supply helps spell a bright future for aluminum in the building industry. So, when you plan for the future, we urge you to *keep aluminum in your plans.*

Aluminum building materials offer exclusive advantages

They offer advantages in beauty, design and quality that are found in no other building material. We feel they deserve your consideration for the present and the future. Representative applications of Kaiser Aluminum building materials in use today are shown on these pages.

For full information about any of these Kaiser Aluminum building materials, including AIA files, write: Consumer Service Division, Kaiser Aluminum & Chemical Sales Inc., 554 Kaiser Building, Oakland 12, California.

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HOMES IN TUNE WITH THE TIMES . . . HAVE NUTONE DOOR CHIMES

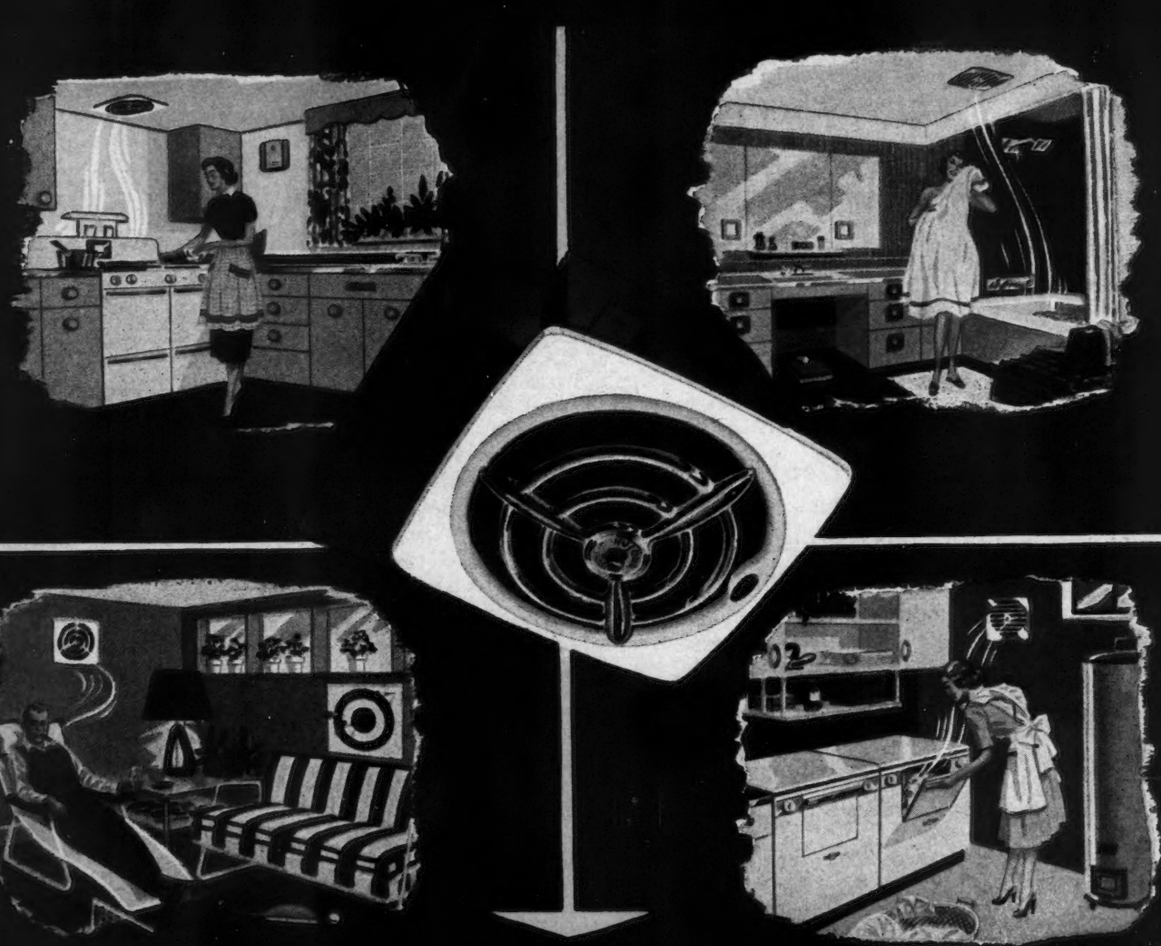
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Installation data on Fiberduct raceways are available from the underfloor specialist at your local G-E office. For a free copy of the *G-E Fiberduct Manual* write to Section C54-55, Construction Materials Division, General Electric Company, Bridgeport 2, Connecticut.

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THE RECORD REPORTS

CRISIS SETS THEME FOR A.I.A.'S 83RD ANNUAL CONVENTION

Institute's Biggest Conclave, May 8–11 in Chicago, Offers Dual Program to Handle Unprecedented Attendance; Burchard Address on "Humanity, Our Client" Is Keynote for Meeting

THE NATION'S ARCHITECTS are expected to turn out in record numbers for the 83rd annual convention of the American Institute of Architects at the Edgewater Beach Hotel in Chicago May 8–11.

"Humanity, Our Client," the opening address by John Ely Burchard, dean of humanities at Massachusetts Institute of Technology, will provide the keynote of the convention. Another address underlining the function of architecture in the service of mankind, "Design for Living," will be made by Dean Joseph Hudnut of Harvard University's Graduate School of Design.

Theme of the 1951 convention is "Building for Permanence in Times of Crisis," which is implemented in sessions on "The Architecture of Civil Defense," "Our Threatened Cities," and "Building Under Controls."

Seminar Series Continued

The convention series of seminars on "Fundamentals of Design" is continued in this year's sessions on acoustics and modular coordination; but the unprecedented attendance indicated by advance registration for the convention has led Institute officials to schedule these meetings concurrently with the National Defense sessions.

The annual banquet on Thursday, May 10, the one event of the convention at which it is necessary to assume everybody will gather at once, will be held in the University of Illinois Auditorium at Navy Pier.

For those with an interest in Institute politics — a category which has sometimes seemed pretty inclusive — elections will have a special interest this year. With a new president to be elected, this is a year of change.

By the middle of April, contests had developed for two offices and two regional directorships. First Vice President Glenn Stanton of Portland was the sole candidate for president; Kenneth E. Wischmeyer of St. Louis for first vice president; and Maurice J. Sullivan of Houston for treasurer. G. Thomas Harmon of Columbia, S. C., was unopposed for regional director of the South Atlantic District and Edward Lawrence Wilson of Fort Worth, Tex., for director of the Texas District.

Election Contests Shape Up

But for second vice president, Norman J. Schlossman of Chicago was contested by Howell Lewis Shay of Philadelphia; and Clair W. Ditchy of Detroit, nominated to succeed himself as secretary, also had an opponent, Walter W. Hook of Charlotte, N. C. George B. Allison and Charles O. Matcham, both of Los Angeles, were candidates for the regional directorship of the Sierra Nevada District. The other directorship contest was for the Central States District post, sought by Leonard H. Bailey of Oklahoma City and Thomas K. Fitz Patrick of Ames, Ia.

Traditional ceremonies at the annual banquet will be climaxed by award of the Gold Medal, highest honor in the gift of the Institute, to Bernard Ralph Maybeck, 89-year-old California architect. Wallen White Maybeck will accept the Gold Medal for his father, who will be unable to attend.

New Fellows Named

Fellowships will be conferred on 39 members of the A.I.A. chosen for outstanding professional achievement.

The new Fellows are: Andrew Thomas Hass, San Francisco; Albert Kruse, Wilmington, Del.; Waldron Faulkner, Luther M. Leisenring and Henry Hodgman Saylor, Washington; Russell Thorn Pancoast, Miami Beach; Samuel Inman Cooper and Philip Trammell Shutze, Atlanta.

Also Earl Howell Reed, Norman J. Schlossman and Philip Will Jr., Chicago; Edward D. Pierre and George Caleb Wright, Indianapolis; Charles Altfillisch, Decorah, Ia.; Lorentz Schmidt, Wichita, Kas.; Henry Powell Hopkins, Baltimore, Md.; Chandler C. Cohagen, Billings, Mont.; Welles Bosworth, Locust Valley, L. I., and Vaucresson, France; Henry Stern Churchill, Walter H. Kilham Jr., William Lescaze, William Platt, L. Andrew Reinhard, Roland A. Wank and Lawrence Grant White, New York City; and Lorimer Rich, Brooklyn.

Also Munroe Walker Copper Jr., Cleveland; Herman Brookman and Walter E. Church, Portland, Ore.; Morton Keast, Howell Lewis Shay, Grant Miles Simon, and Harry Sternfeld, Philadelphia; Thomas Dohoney Broad, Dallas; Maurice Joseph Sullivan, Houston; Clyde Grainger, B. Marcus Priteca and Paul Thiry, Seattle; Edgar Hubert Berners, Green Bay, Wisc.

Honors Are Listed

Honorary memberships in the Institute will be received by Edwin S. Burdell, director of Cooper Union; Lewis Mumford, author and critic; and W. Engelbert Reynolds, Commissioner of the Public Buildings Service.

Other honors to be awarded are the Fine Arts Medal, to Thomas Church, landscape architect, San Francisco; the Edward C. Kemper Award, to Marshall Shaffer, chief architect of the U. S. Public Health Service; and a special Citation for Craftsmanship to Corning Glass Works for its Steuben glass.

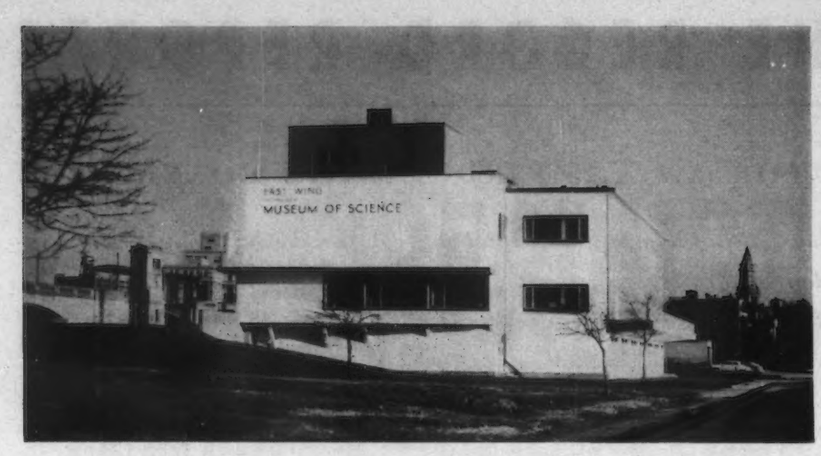
Awards in the A.I.A.'s third annual program of Honor Awards for Current Work will be announced at the convention; and convention exhibits will be led by the Honor Awards exhibit of distinguished work in the fields of industrial buildings, hospitals and residences.

Also to be announced are winners in the annual Building Products Literature Competition jointly sponsored by the A.I.A. and the Producers' Council; and winning entries will be on display.

The products exhibit will be comprised of 50 commercial exhibits selected from many times that number.

National Defense sessions will lead off with the program on the architecture of civil defense on the first afternoon of the convention. The program, developed under the general direction of Harry M. Prince of New York, will include talks by Col. Lawrence Wilkinson, assistant

(*Continued on page 14*)



COMPLETE EAST WING OF NEW MUSEUM OF SCIENCE FOR BOSTON'S "SCIENCE PARK" ON CHARLES RIVER

BOSTON'S NEW MUSEUM OF SCIENCE has launched an elaborate building program with completion of its "East Wing" at "Science Park," a six-acre site on the Charles River basin.

Ames, Child and Graves of Boston are architects for the entire project, which as funds permit will include a central tower and another wing besides two more buildings, one a planetarium and the other an auditorium.

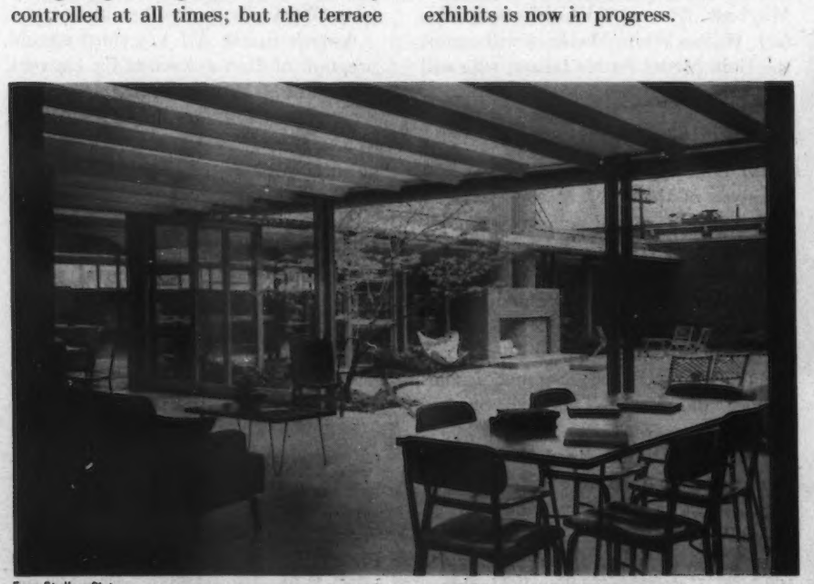
The completed wing, which has more than 500,000 cu ft of space, will serve meanwhile as a self-contained museum of science, with a "little planetarium" and exhibits of natural history.

The building is a three-story structure of steel frame and brick and cinder block exterior walls. It is almost windowless, so lighting throughout can be closely controlled at all times; but the terrace floor has large glass areas to afford a view of the river and the Boston skyline.

Movable partitions have been used for easy shifting to tie in with changing exhibits and needs; and the floor sections themselves can be removed without changing the floor stresses at any other point.

The terrace floor contains lecture and demonstration rooms, educational offices, laboratories and storage. The second and third floors, the museum proper, are in effect two great exhibition halls.

Cost of this first unit was $750,000. The new museum is the successor to the Museum of Natural History, founded in 1864 by the Boston Society of Natural History. Next unit scheduled is the planetarium. A campaign to raise $1 million for its construction and for new exhibits is now in progress.



Ezra Stoller: Pictor

Youth Library, Fitchburg, Mass.: view across main reading room toward courtyard

AWARDS GIVEN AT OPENING OF PHILADELPHIA EXHIBIT

MEDALS WERE AWARDED by the Philadelphia Chapter of the American Institute of Architects to the architects of buildings in several categories at a dinner which opened last month's exhibition of contemporary architecture at the Art Alliance in Philadelphia.

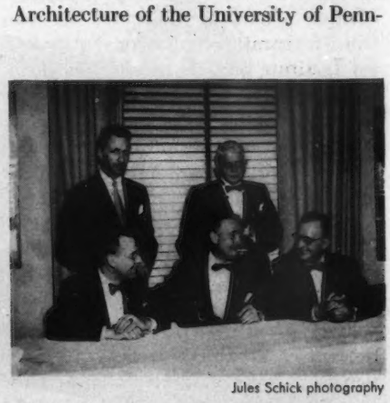
James A. Nolen Jr. and H. H. Swinburne of Philadelphia were awarded the chapter's Medal of Honor for design of Presidents' Hall at Temple University, judged "the most outstanding architectural project" in a competition for buildings in the Philadelphia area, including suburban communities.

Award for "the most outstanding out-of-town project" went to Carl Koch and Associates of Cambridge, Mass., for their Youth Library at Fitchburg, Mass.

Honorable mention in the out-of-town competition was won by Jack Hillmer for a studio-residence at Belvedere Island, San Francisco. Mentions were also awarded to Philip C. Johnson and Landis Gores for a New York town house and to Harold M. Heatley and Ketchum, Giná and Sharp for an Augusta, Ga., department store.

In the Philadelphia competition, honorable mention went to Norman Rice for a store. Mr. Rice also won a mention for a residence in Elkins Park, near Philadelphia. Clifford E. Garner won a mention for an automobile salesroom.

The Cope Prize for student work was shared by Andrew Kirk and Charles L. Miller, both students at the School of Architecture of the University of Penn-



Jules Schick photography

At the dinner which marked formal opening of architectural exhibit at the Art Alliance: standing — Pietro Belluschi and Laurence H. Eldredge, Art Alliance president; seated — Russell Lynes, Theodore B. White, and Professor George Howe

sylvania. Both submitted models for a consolidated school.

In the field of landscape architecture, Lawrence Halprin of San Francisco won honorable mention for a group of California gardens.

The jury for the awards included George Howe, chairman of the Department of Architecture at Yale University; Jean Labatut, professor in charge of graduate studies in architecture at Princeton University; and Pietro Belluschi, dean of the School of Architecture and Planning at the Massachusetts Institute of Technology.

The exhibition, which occupied six galleries, presented through models, photographs and drawings the completed or projected work of 25 architects in the Philadelphia area and 20 from other sections of the country.

Principal speaker at the dinner was Russell Lynes, editor of *Harper's* Magazine and author of the current bestseller, *Snobs*.

The exhibition was arranged by the Architecture Committee of the Art Alliance, which has Theodore B. White as chairman.

MARCH AWARD TOTAL OFF; SEE START OF "SQUEEZE"

CONSTRUCTION CONTRACTS awarded in the 37 eastern states in March as recorded by F. W. Dodge Corporation showed a three per cent decline from March 1950, and Dodge President Thomas S. Holden thought the expected "squeeze" on construction had begun.

Mr. Holden pointed out that, although the March construction figure was the second highest on record for the month of March, it was the first month since July 1949 that failed to show a contract volume increase over the corresponding month of the preceding year.

Declines in commercial, recreational and residential categories were recorded, and Mr. Holden said the figures "showed the restrictive effects of defense rules and regulations."

Three-month totals for this year were running ahead of last year in dollar volume in all categories, according to Dodge statistics. Construction awards of $3,451,225,000 were 23 per cent higher than the figure for the first three months of 1950.

Navy Recalls RECORD'S *Editor*



Harold D. Hauf, editor-in-chief of ARCHITECTURAL RECORD *since September 1, 1949, has been recalled to active service by the United States Navy, effective May 1. Commander Hauf will be Coordinator for Design and Construction in the Public Works Office, Headquarters First Naval District, Boston*

$2 MILLION INDUSTRIAL OFFICE BUILDING FOR LOCKHEED IS UNDER WAY IN BURBANK

THE $2 MILLION industrial office building designed by Welton Becket and Associates for Lockheed Aircraft Corporation in Burbank, Calif., has been under construction since March.

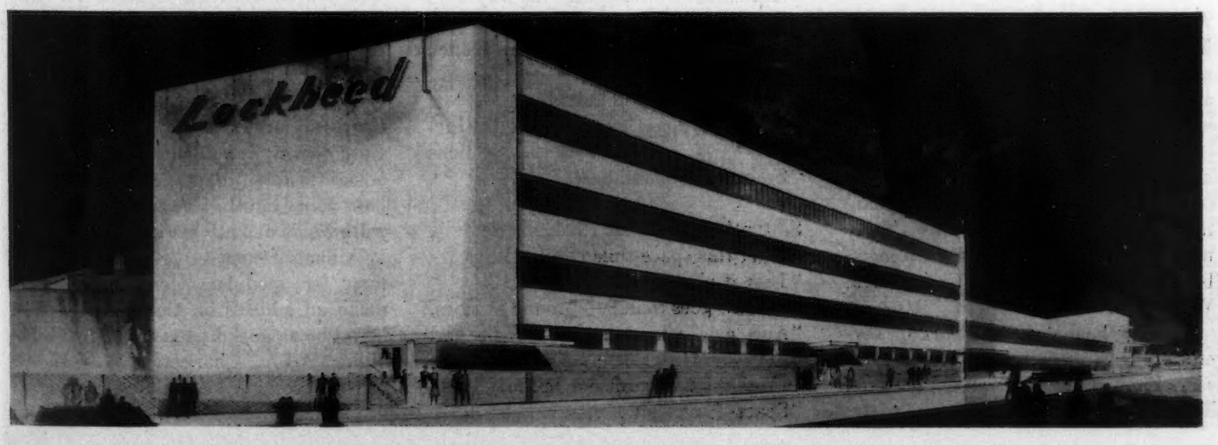
The five-story structure will be one of the largest of its type in southern California, providing accommodation for 1500 administrative and engineering personnel in 165,000 sq ft of floor space.

Construction will be reinforced concrete flat slabs, with sheer walls on the east and west and fabricated insulated panels acting as spandrels between continuous bands of windows on the north and south elevations.

A steel truss roof will eliminate any need for columns on the top floor, which will be occupied by engineering offices. The basement has been designed both to provide quarters for the tabulating department and to serve as an emergency bomb shelter.

The building will be air conditioned.

Industrial office building for Lockheed Aircraft Corporation in Burbank, Calif. Construction has been under way since March





Leonard G. Haeger, former HHFA official

HAEGER JOINS N. A. H. B. AS MATERIALS EXPEDITER

LEONARD G. HAEGER has left his post as assistant director of the Housing and Home Finance Agency's Division of Housing Research to become Building Materials Expediter for the National Association of Home Builders.

Mr. Haeger's job will be to provide liaison with federal agencies which control production and use of materials.

The N.A.H.B. announcement said he will also be concerned with integration of materials with construction to effect savings; building codes; exploration of new materials and products; and keeping N.A.H.B. members informed on construction details of a technical nature.

Mr. Haeger, a 1928 graduate of Washington University at St. Louis, has a master's degree in architectural engineering and is a member of the American Institute of Architects. He joined the National Housing Agency, which later became the Housing and Home Finance Agency, in 1946, after service with the Navy as a lieutenant commander.

SKIDMORE FIRM IS ALLIED WITH BELLUSCHI ON COAST

ASSOCIATION of Skidmore, Owings & Merrill, Architects, with Pietro Belluschi in a Portland, Ore., office has been announced by John L. King, a partner in the firm.

Mr. Belluschi, who has had his principal office in Portland, is the new dean of the School of Architecture and Planning at Massachusetts Institute of Technology, Cambridge, Mass. He is a member of the Fine Arts Commission, Washington, D. C.

The Portland staff is at work on several projects, including the Federal Reserve Bank of Portland and the Portland Telephone Exchange Building.

A.I.A. CONVENTION

(*Continued from page 11*)

to the director of the New York State Civil Defense Commission; Fred N. Severud, engineering consultant, New York; and Morris Ketchum Jr., A.I.A., New York. Mr. Prince will moderate a panel discussion on what communities expect of architects in their civil defense programs. Members of the panel will include Mr. Ketchum and Lawrence B. Perkins of Chicago, Moreland B. Smith of Montgomery, Ala., Perry B. Johanson of Seattle and Victor D. Gruen of Hollywood, Calif., all A.I.A. members.

Albert Mayer, A.I.A., of New York, and G. Holmes Perkins, A.I.A., of Philadelphia, have had general direction of the program for the session on "Our Threatened Cities," scheduled for the afternoon of Wednesday, May 9. Speakers will be Dr. Ralph E. Lapp, former head of nuclear physics for the Office of Naval Research and author of "The Safety of Space"; Jacqueline Tyrwhitt of the Association for Planning and Regional Reconstruction, London, England, and a visiting professor at Yale; William L. C. Wheaton, A.I.P., of the Department of Regional Planning, Graduate School of Design, Harvard University; and Vernon de Mars, of the University of California School of Architecture. William F. R. Ballard, A.I.A., of New York will be moderator for the panel on "Planning as Architecture." On the panel will be Fred Lewis Markham, A.I.A., Provo, Utah; Charles K. Agle, A.I.A., New York; George Bain Cummings, F.A.I.A., Binghamton, N. Y.; Richard N. Kuhlman, A.I.A., Norman, Okla.; Henry S. Churchill, A.I.A., New York; Nathaniel A. Owings, F.A.I.A., Chicago; Tracy B. Augur, Urban Planning Officer of the General Services Administration; and Carl Feiss, chief of the community planning branch of the HHFA.

John L. Haynes, chief of the Building Materials Division of the National Production Authority, is scheduled to start the Thursday afternoon session on "Building under Controls." Other speakers on the program, developed under the direction of Douglas Orr, F.A.I.A., of New Haven, will be Richardson Bronson, assistant general counsel for construction of NPA; and Arthur C. Holden, F.A.I.A., New York. H. C. Turner, president of the Turner Construction Company of New York, will moderate a panel discussion on how to build under controls. Panel speakers, all A.I.A. members, will be Stayton Nunn, Houston; C. E. Silling, Charleston, W. Va.; Welton D. Becket, Los Angeles; and Harold D. Hauf, New York.

Acoustics seminars will feature talks by Dr. Howard C. Hardy of the Armour Research Foundation, Chicago; Hallowell Davis, research director for the Central Institute for the Deaf, St. Louis; Samuel H. Hooper of Remington Rand, Inc.; Verne O. Knudsen, University of California; R. Allen Wilson, Celotex Corporation; C. M. Ashley, Carrier Corporation; Robert B. Newman, Massachusetts Institute of Technology. William Jones Smith, F.A.I.A., of Chicago will preside at both sessions.

William Demarest Jr., A.I.A. secretary for modular coordination, will make an address on that subject, followed by a panel discussion led by C. E. Silling, A.I.A., Charleston, W. Va. M. Edwin Green, A.I.A., Harrisburg, Pa., will be moderator.

RELATIVE CONFUSION MAY STRIKE YOU ANOTHER WAY

FOR WHAT CONSOLATION it may provide to architects with (more) (less) pressing problems, the RECORD here reproduces a poem written 20 years ago when space-time architecture was making the news.

The author was George Howe, now chairman of the Department of Architecture of Yale University. The poem is entitled "Confusion of an Architect on First Reading About Space and Time."

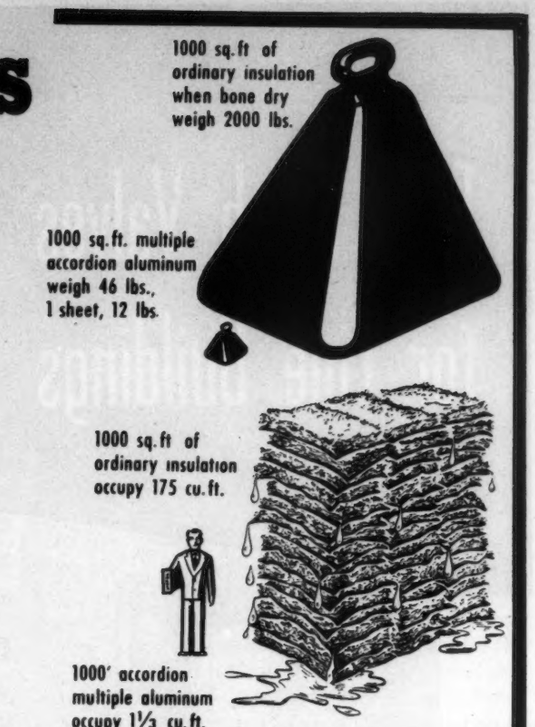
Good St. Augustine, as a child,
Would drive his mother almost wild
With thoughts on Time and Space,
"Now, mother, is today the last
"Of those that went to make the past
"Or else the first in which to cast
"The future of our race?"

While Bishop Berkeley used to say,
When Isaac Newton came his way
"Your particles of time
"And space and speed, your fluents, fluxions,
"And mathematical inductions
"Make Mother Church's dark instructions
"Seem clarity sublime."

So that's why Albert Einstein tried
To get this space-time clarified.
"I see it all," said he,
"As time goes round and round in rings,
"And gets mixed up with light and things,
"From relative confusion springs
"Space-Time Complexity."

Why heat TONS

OF INSULATION, MOISTURE AND OUTER WALLS DAILY ?



3000 sq. ft. of ordinary mass insulation means about 3 tons of it to heat every winter morning. If moist and heavy with condensation, there is that much more tonnage to heat, plus the fuel required to evaporate it. (It takes 1,060 Btu's at 60° F to convert 1 lb. of WATER into vapor. Only half that amount, or 530 Btu's, is needed to raise 1500 cu. ft. of AIR 20°) In addition, ordinary insulations transmit heat to outer walls by direct conduction through solids.

Most building materials, including mass insulations if air-spaced to reduce direct conduction through solids, ABSORB over 90% radiant heat on one surface, and emit 90% on the other surface. *Multiple sheets of accordion aluminum THROW BACK the heat inside the building in winter, outside in summer.* (They REFLECT 97% of heat rays, emit but 3% on the opposite side, block convection, and allow but 5% heat loss by conduction through their air spaces which have negligible density)

NO CONDENSATION CAN FORM

In winter (with multiple accordion aluminum sheets) there is little heat loss or expense in heating 3000 sq ft. of the one aluminum sheet in contact with the warm air. It weighs less than 40 lbs (1/100 lb. per sq ft.), immediately assumes almost the same temperature as the contiguous warm air, and so is *non-condensation forming* Its zero permeability prevents any passage of vapor.

The outer aluminum, which also weighs less than 1/100 lb. per sq. ft., is about the same temperature as the contiguous cold air, (slightly warmer in fact) and so is *also non-condensation forming*. Since heat flow in conduction and radiation is from warm to cold, no heat is extracted from the air (the reverse in fact). Therefore the capacity of the air to retain vapor without condensing is not reduced (in fact, increased).

THERE IS NO DEW-POINT

Between the 2 external aluminum sheets are 4 protective, reflective air spaces; *without a dew-point* anywhere on or within the insulation.

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NEWS FROM WASHINGTON *by Ernest Mickel*

Data on Building Design to Withstand Atomic Blast Set for Early Release; "Critical" Areas, "Defense" Standards Stir Housing Debate; Controlled Materials Plan July 1 on Steel, Copper, Aluminum; Report Puts School Needs at $14 Billion

THE FEDERAL CIVIL DEFENSE program shows new signs of life. Better criteria by which architects and engineers can approach their problems of building design in an atomic age are expected to emerge soon from an accumulation of recent developments.

First, the Atomic Energy Commission in its guarded fashion has let it be known that building materials and various types of construction will be tested with atomic weapon blasts at new explosions in the Pacific — on the Eniwetok proving grounds. This comes as welcome news to the architectural profession. In fact, it is partially in answer to the request of the American Institute of Architects that special tests be made to determine the effects of atomic blast on buildings and building components. Results of just such tests as those now planned have been sought by the Institute's Committe on Architecture and Nuclear Science. Thomas K. Fitzpatrick is chairman.

With new information gained from these experiments to combine with known factors, the Federal Civil Defense Administration will be in a position for the first time to issue reliable and specific information to architects and engineers on the subject of building design to withstand atomic blast. Heretofore, the sources for this criteria have been primarily the observations of bombed areas in Japan — Nagasaki and Hiroshima — and for defense against the more conventional types of attack, the experiences of England during blitz periods of World War II.

This has not been enough. FCDA wanted more; the architects have asked for more. More detail is coming.

"The Shelter Package"

Among the first tangible results will be "the shelter package," so called, which will wrap up specific information on the most suitable materials and best design methods for safe buildings. This will be pointed toward architects and engineers. It can be expected as soon after results of the Eniwetok tests are known as the information can be assembled, combined with present knowledge, and published. FCDA is determined to move as rapidly as it can in a sure and orderly way.

A number of preliminary attempts at issuing similar information have not gotten far before they were abandoned. Principal reason is that officials were not convinced they had the right answers. Take the booklet on how to build an outdoor shelter, for example. This was prepared largely on information gained from England's experiences with blockbusters. It was ready for issue, but then was held back because authorities came to doubt its usefulness in an atomic age. Also, they feared a rush by the public to construct shelters of the backyard type would put an unjustified drain on critical building material supplies.

Where formerly a basement could be bombproofed easily by the simple installation of square arch construction, making it safe against shock and the debris load on top, now that A-bombs are the threat, lateral forces must be taken into consideration as well.

FCDA personnel are hopeful that the Atomic Energy Commission will come up with valuable results in its Pacific tests. They could be the spring to release the long-sought data. Unofficial reports indicated that the atomic weapons to be used at Eniwetok would be supported on steel towers and exploded to test their effects on nearby structures, partially completed. This could test the effects on various design types and on an array of building materials incorporated in various designs. Instrumentation is expected to be extensive.

Information now coming in from the

(*Continued on page 20*)



— Drawn for the RECORD by Alan Dunn

"Israel wants more hot water, Iraq is complaining about Lebanon leaving papers in the hall, Afghanistan wants the exterminator, Burma says Peru got more storage space than she did, Iceland wants something done about the television interference and Russia is expecting a C.O.D. from Macy's . . ."



Panda Photography

Oshawa, Ont., High School won Gold Medal in Massey Foundation's first architectural competition. Architects: John B. Parkin Associates

NEWS FROM CANADA

by John Caulfield Smith

Canadian Architects Pledge Support to Defense Program

COMPLETE SUPPORT of the architectural profession in the implementation and conduct of the program of national defense" was pledged in a resolution of the recent 44th annual assembly of the Royal Architectural Institute of Canada.

Presentation of the Massey Medals was made at the annual dinner to representatives of previously-announced winning firms — John B. Parkin Associates, Page & Steele, and Marani & Morris, all of Toronto; Gardiner & Thornton, Vancouver; and J. C. Meadowcroft, Montreal.

J. Roxburgh Smith of Montreal was reelected president by the assembly, which was held at Quebec City.

Other officers elected were: H. H. Simmonds, Vancouver, first vice president; H. Claire Mott, Saint John, second vice president; Harold Lawson, Montreal, honorary secretary; R. Schofield Morris, Toronto, honorary treasurer. In addition, 25 members were named to serve on the Council.

Institute fellowship was conferred on Pierre Levesque of Quebec City; H. H. G. Moody, Winnipeg; Alfred E. Priest, Halifax; and Leonard E. Shore, Toronto. Honorary fellowships to non-members went to Prime Minister Louis St. Laurent and to Arthur L. Fleming, Institute solicitor.

The Prime Minister told the Institute's annual dinner meeting that if war can be avoided for five more years the world can look forward to a long period of peace. He likened the peace efforts of the democracies to architects constructing a building that would have to withstand rough weather.

Impact of defense construction and inflation curbs on civilian building re-

(*Continued on page 260*)

Warner Bros. Commercial Photographers





Top entries in each category in the Massey competition were awarded Silver Medals. At left: (top) Canadian National Exhibition Grandstand, Toronto — Marani & Morris, architects; (bottom) Shipshaw No. 2 Power Development, Saguenay River, Quebec — J. C. Meadowcroft, architect; H. G. Acres and Company, consulting engineers

The Big News this Spring
is Universal·Rundle



Decorator-designed bathrooms in the "*Post*"...in "*Better Homes*"!

Have you seen them? "So beautiful that only natural color photography *could* do them justice!" said a New York Art Director, when he saw the sets. So we photographed them.

Be sure to see the 1951 Universal-Rundle color advertisements based on these decorator-designed bathrooms, in the SATURDAY EVENING POST and BETTER HOMES & GARDENS. Watch for them—14,000,000 others will be looking, too! And remember, the beauty of these Ving Smith "Bathrooms for Americans" is no more than the natural beauty of Universal-Rundle fixtures. See them, touch them, test them. Then only will you know how *salesworthy* are the brilliant white, the matched color, the top quality and performance of these world's finest bathroom fixtures.

50th Anniversary Catalog—Yours! Write today on your letterhead for a copy of the U/R 1951 Catalog. Shows the complete line of bathroom and kitchen fixtures—plans, drawings, specifications, and a world of help for everyone who sells, installs, recommends, or specifies bathroom and kitchen fixtures. See our catalog in Sweet's Builders File.

The whitest fixtures are U/R—whiter by actual scientific test, than any other leading make.

The strongest bond between surface glaze and body in U/R fixtures, means highest resistance to chipping.

"Harder than steel" surfaces are easy to keep clean, scratch-free, and sparkling new in U/R ware.

Who is Universal-Rundle? U/R is the half-century young pioneer of many industry "firsts": colored vitreous china, one-fire tunnel-kiln firing, complete laboratory control of production, and many others.

Universal·Rundle

UNIVERSAL-RUNDLE CORPORATION • NEW CASTLE, PA.

WASHINGTON *(Cont. from p. 17)*

tests at Lehigh University, Bethlehem, Pa., will form the basis for the Eniwetok experiments. Some $75,000 was spent at Lehigh under supervision of the Army Corps of Engineers.

The first published manuals based on the Lehigh findings are expected to come out sometime late this month, if the review process is completed without any snags.

It is tentatively planned to bring out the information in the form of five or six manuals on different shelter building topics. The first may be on locating "safe" structures presently available in the neighborhood. The second probably will deal with how to strengthen existing structures to make them more A-bomb-proof. Another will carry information on communal-type shelter construction; still another will provide data on individual-type shelters. A final manual probably will be issued to round up general information.

The manuals on specific construction matters will carry plans for improvements of existing buildings and for new construction. They will be published independently of the material on the Eniwetok tests of the AEC. The combined material from both projects will be utilized later.

In announcing the tests in the Pacific, the AEC said in part:

"The U. S. Atomic Energy Commission announced today, in response to inquiries from the American Institute of Architects, that test programs at the Commission's Eniwetok proving ground in the Pacific include extensive provisions for measurement of atomic weapons' effects on structures and materials of various kinds.

"The Commission has advised the A. I. A. that a major project is being carried out to supplement data already obtained from other atomic blasts, with instrumentation specifically arranged to provide data for the development of design criteria needed by architects. This information will be made available to the FCDA."

Rex L. Nicholson, widely-known California business leader and government consultant, joined the administration's staff a month ago as special assistant to Administrator Millard Caldwell. He brings to the civil defense agency a wide experience in construction. Before World War II, he was assistant administrator of the Federal Works Agency in charge of construction in 11 western states. There were reports that he might take special interest in the design and materials project, hastening publication of the shelter package. This should be good news to architects and engineers. Mr. Nicholson is serving without compensation.

Where Will the Bombs Fall?

The matter of pinpointing locations for emphasis on defense construction is one of the more baffling phases of the program. This shades into the "classified" realm, but there have been indications of official thinking on these so-called target area locations.

Carefully edited testimony of FCDA officials before the House Appropriations committee was released the first of last month. In it, Administrator Caldwell said there was some "pretty responsible thinking" that an enemy attack would be directed at 15 to 20 American cities

(Continued on page 22)

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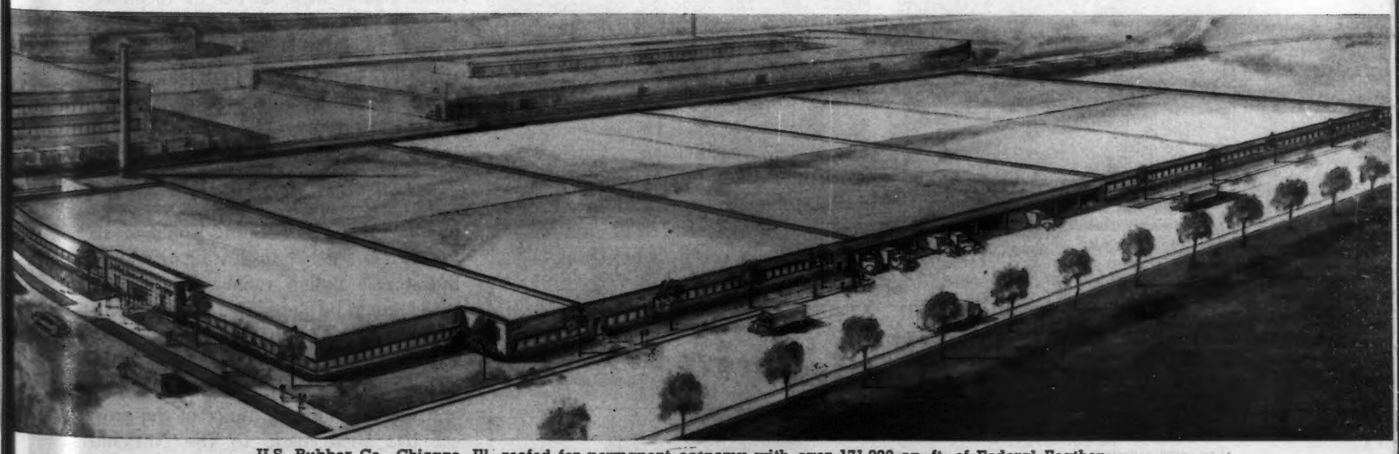
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WASHINGTON (*Cont. from p. 20*)

simultaneously. These were not specified in detail. However, Washington, D. C., Baltimore, Richmond, Atlanta, Birmingham and St. Louis were mentioned, and it was plain that these cities are being regarded as critical target areas. Among others mentioned as possible targets were Minneapolis, St. Paul, Chicago, Seattle, Portland, San Francisco and Los Angeles.

This listing could not be considered as in any way conclusive. There were obvious omissions, for northeastern industrial centers known to have a high priority in the considerations of possible target areas were not named in the public testimony.

But it was brought out that officials believe any major attack from Russia would start over the polar region, bringing cities in the northern sections into greatest danger first.

Protection in Washington

There are two vivid examples of current thinking on defense construction, public and private, in Washington, D. C.

An elaborate new White House bomb shelter has been described as an elaborate layout for protecting the Chief Executive in event of enemy attack. The shelter area installed in 1942 was a rather simple protection against the dangers then known. This now has been remodeled to permit occupancy for an indefinite period. It has special ventilating systems first erected to guard against poisonous gas and now modernized to filter out radioactive dust particles. The shelter is said to include one large room as living space and office, a small bedchamber, cooking facilities and storage space for medical supplies. Reportedly, the walls are nine ft thick, of reinforced concrete, with entrance gained through double steel doors.

In the plan stage is a new 10-story office structure which, if built, would be the largest in Washington. Architect Matthew G. Lepley has incorporated a number of "atomic age" features in his preliminary plans for the building. He first studied carefully recommendations of the Defense Department, the National Security Resources Board and the Atomic Energy Commission.

The project would accommodate 1300 offices, a two-story-high auditorium with 750 seats and a 450-car garage. At street level there would be space for 10 stores besides the garage area.

Defense features include a sub-basement shelter area buried 27 ft underground. This space would contain a battery-operated telephone connecting it with the rest of the building, a gasoline or diesel-driven power plant, water supplied from two wells under the building, and chemical toilets for emergency use.

Three basement levels are included in the plans. The building would measure 237 ft by 149 ft. Facing would be limestone. Boiler room and cooling tower would be placed in a setback penthouse area. The bomb shelter space would accommodate 8000, Mr. Lepley estimates.

Application for clearance of the project has been made to the National Production Authority but there was no word of approval at this writing.

(*Continued on page 24*)

Quick answer to a $300,000,000 question



How can you know whether the truck mixers that serve your jobs have the accuracy of water control, design and speed of drum and full amount of free mixing space needed to properly mix the concrete they deliver?

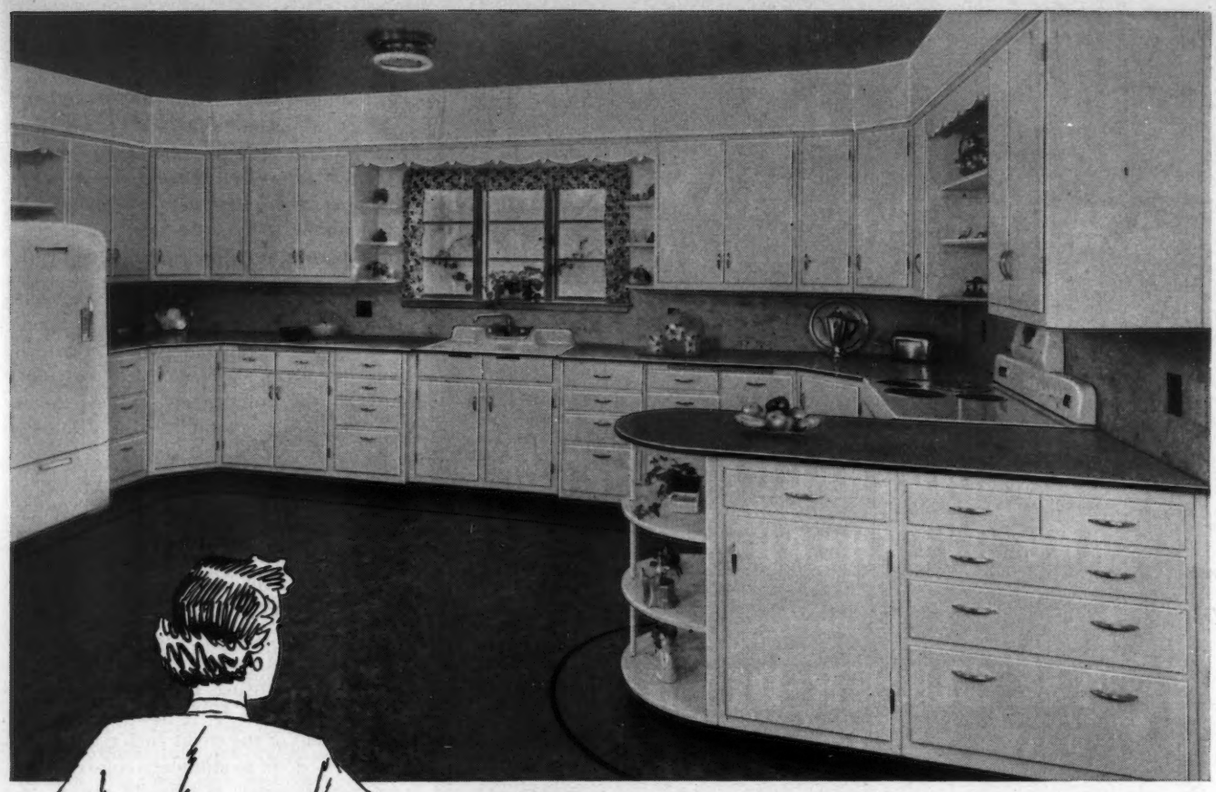
You simply look for this standard rating plate.

The Bureau rating plate is available to all manufacturers who meet its quality standards and requirements.

To the construction industry, which uses more than $300,000,000 worth of ready-mixed concrete a year, this rating plate gives indispensable protection against questionable concrete from non-standard truck mixers. Insist on it, when you approve or buy concrete ready-mixed.

Truck Mixer Manufacturers Bureau

BLAW-KNOX DIVISION, Pittsburgh, Pa.
CHAIN BELT COMPANY, Milwaukee, Wis.
CONCRETE TRANSPORT MIXER CO., St. Louis, Mo.
THE JAEGER MACHINE COMPANY, Columbus, Ohio
THE T. L. SMITH COMPANY, Milwaukee, Wis.
WORTHINGTON PUMP & MACHINERY CORP., Dunellen, N. J.





Take a

housewife's eye-view

of a CURTIS KITCHEN

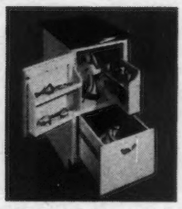
When it comes to kitchens, Mrs. America is sharp-eyed. That's why she so readily appreciates the years of experience that have gone into the design and construction of Curtis kitchen cabinets. Here are some features she'll notice in the Curtis kitchens *you* include in your plans!



Close-up of Curtis wall unit showing large storage space. Cabinet is made in 36" and 44" heights and in eleven widths—from 12" to 44". All are 14" deep.



Just the thing for quick lunches. Tabletop folds and slides into unit. Space below is pan unit for large utensils. May be used alone, or with cabinet above.



Mixer and vegetable storage unit—24½" deep, 32" high, 18" wide. Ventilated vegetable drawer is below. This unit is a "must" with busy housewives.



Pan and bread drawer unit—has two small wood drawers 3" deep and one metal bread drawer 8¼" deep, 19" long, 10¾" wide. Two widths, 28" and 32".

For long years of strenuous daily use, Curtis cabinets are made of *wood*, painted two coats at the factory. They can be left "in the white" or finished in any color of the owner's choice. All hardware is furnished and applied. For complete information, mail the coupon.

Curtis Companies Service Bureau
AR-5K Curtis Building
Clinton, Iowa

Gentlemen:
I want to know more about Curtis kitchen and storage cabinets. Please send your free book.

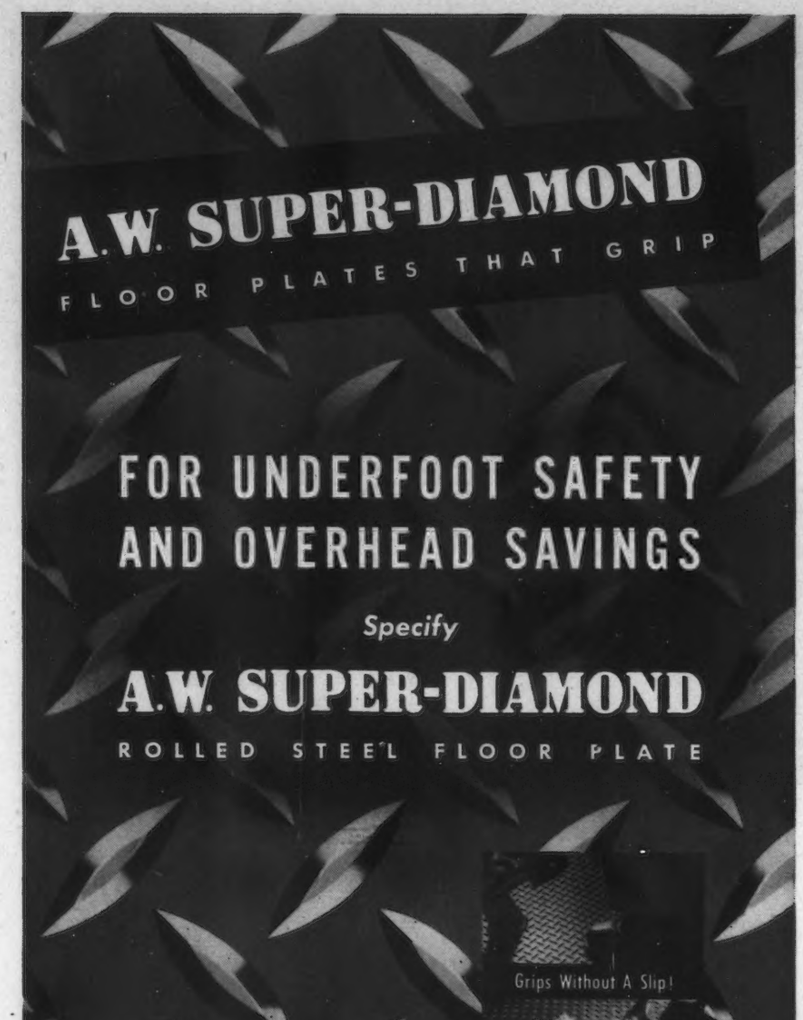
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Address.....

City.....*State*.....

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THE RECORD REPORTS

WASHINGTON
(Continued from page 22)

More "Critical" Designations

With passage of a defense housing bill, the number of pinpointed locations in the U. S. being designated as critical defense areas would increase manyfold. When the Interagency Critical Areas Committee was established a little over a month ago, the activity in this field so important to architects and home builders was limited necessarily to determinations regarding Regulation X and its application. Regulation X, imposed as a curb on credit extended for housing sales last October, since has been extended to include most commercial construction and some industrial types.

At this writing only three specific localities in the U. S. had been given the benefit of the credit curb relaxation; this was done to stimulate construction of new housing, principally rental, to be occupied by defense workers certified for that occupancy by their employer. The areas affected were the Savannah River locale, in South Carolina; the Paducah, Ky. region; and three cities in Idaho — Arco, Blackfoot and Idaho Falls. All these are areas where the impact of migrant workers already is being felt. Pressure for a high volume of new housing — and community facilities — is being established.

Under the present law, however, little can be done to provide more than some of the needed residential construction. Particularly in the Savannah River and Paducah regions — and this will apply to areas to be named in considerable number — limitations on the number of new homes that can be erected are imposed immediately by the lack of civic improvements such as sewer systems, water systems, schools and hospitals. Here is where proponents of the new defense housing bill say the legislation is needed desperately.

The new legislation, as approved by the Senate Banking committee, clamped a $60 million lid on the amount of federal expenditures for assisting local areas in providing needed community facilities. At the same time, however, the committee recognized the growing financial overload for those cities whose services will be taxed to a breaking point by an influx of defense workers.

The report accompanying S. 349 pointed up the urgency of this fact: "In many cases, housing cannot be provided at all until necessary additional community facilities such as water, sewers, gas and other public utilities are enlarged or extended. It would be entirely unrealistic to expect local governments to bear the entire burden of furnishing community facilities and services required by the sudden impact of defense activities in the area."

If and when the legislation becomes law, the community facilities assistance provision alone will increase the tempo of critical defense area designations. In addition, the Senate version provided additional Federal Housing Administration mortgage insurance authorization of $1.5 billion. This benefit could be applied only to housing constructed in the defense areas named, a restriction which gave home builders cause for worry because they saw the normal FHA insurance fund dropping to a dangerous low point. Some form of emergency legislation, perhaps in the nature of a last-minute amendment to the defense housing act, was expected to bolster this mortgage insurance fund, supporting construction of housing outside defense areas, the normal year-to-year contribution to the housing supply.

What Areas Are Critical?

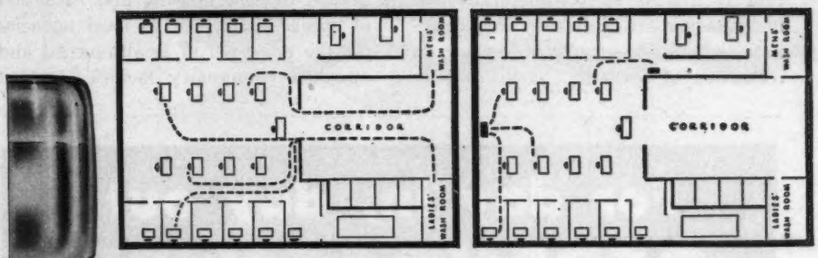
The matter of designating defense areas to receive the limited advantages of Regulation X relaxation now, and the expected broader benefits of the defense housing bill later on, rests with the Defense Production Administration. Ralph R. Kaul has been named chairman of the Critical Areas Committee. His group will have the benefit of representatives from the Department of Defense, Department of Labor, Housing and Home Finance Agency, and the Federal Security Agency.

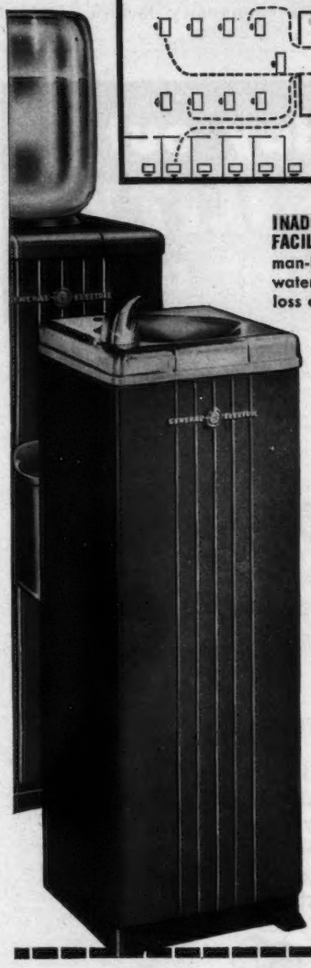
Architects and builders are watching closely the operations of 13 regional defense mobilization committees established by the Director of Defense Mobilization to assist the critical areas group in local investigations. It is probable that earliest indications of exactly what areas are under serious consideration for inclusion in the program will come from these regional bodies.

The Interagency committee in Washington, as announced late in March by Defense Production Administrator Harrison, is serving immediately as an advisory group, recommending to DPA on

(*Continued on page 26*)

Cut wasted man-hours with the compact new G-E Water Coolers!





INADEQUATE DRINKING FACILITIES cause wasted man-hours. Long trips to water source bring the loss of work time.

CONVENIENT LOCATION of G-E Water Coolers means time saved. Employees stay near their desks, are available when needed. G-E Water Coolers are compact, fit in where convenient.

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You can put your confidence in—

GENERAL ELECTRIC

WASHINGTON (*Cont. from p. 25*)

the basis of information turned in from the field committees and that known in Washington. More important work for the Interagency committee is in view, however, as indicated by this statement from General Harrison:

"At present, the Committee's function is limited to consideration and recommendation of defense area designations as necessary action prior to relaxation of residential credit restrictions to finance homes for defense workers. However, if defense legislation now pending in Congress is enacted, the scope of the Committee's functions would also include consideration of such designations prior to the possible use of special mortgage insurance aids for needed defense housing and extension of special assistance to local agencies for the provision of locally-owned and operated community facilities needed for military personnel or defense workers required to be brought into the area to carry out essential national defense activities. Such facilities might include waterworks, sewers, roads and similar public facilities."

It is important to note that under this early approach to the problem of housing shortages no area will be set aside as a critical location merely to provide housing or other facilities required by the reasonable expansion and growth of a community. This injects a note of extreme emergency into the program. Authorizations are being limited, DPA said, "to the meeting of newly arising housing and community facilities needs which are directly attributable to the requirements of the defense mobilization program and which cannot otherwise be provided for, and then only for the period and to the extent necessary to prevent serious delays in urgent mobilization projects."

Powers of the new committee will not be limited to recommendations of new areas to be named for critical defense designations. On the basis of its studies it also will recommend, when it feels such action is warranted, that proposed additional defense construction or military activities be placed in areas where existing community facilities and services are more adequate.

While not probing the labor situation too deeply, the committee has a Labor Department representative among its members, and will give consideration to construction workers, and others, in making its recommendations. This was indicated by General Harrison's statement that:

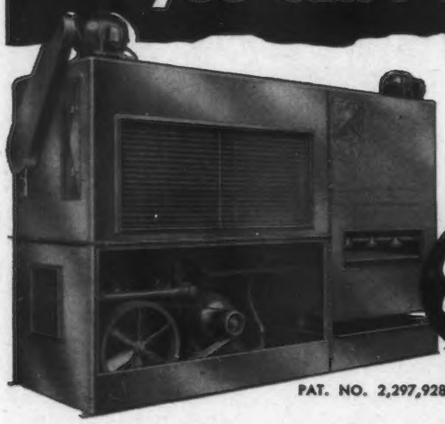
"If additional workers must be brought into the area in substantial numbers, information will also be obtained locally as to whether housing needs can be met through the existing housing supply, including new housing already under construction or specifically planned to be started, and how much additional housing, if any, will be required. Similar information as to necessary community facilities and services will also be obtained locally."

Protest "Defense" Standards

New concern was being expressed by some industry groups over federal agency moves to establish new standards for housing to be constructed under the defense mobilization program. More, and more violent, protests could be expected. For the time being, the op-

(*Continued on page 222*)

For day in, day out
DEPENDABILITY
you can't beat a



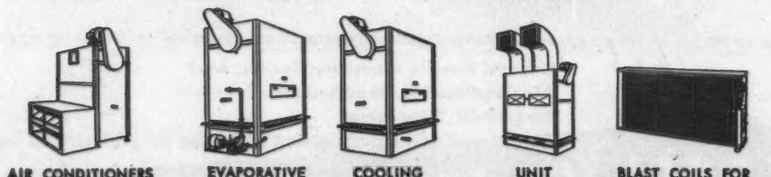
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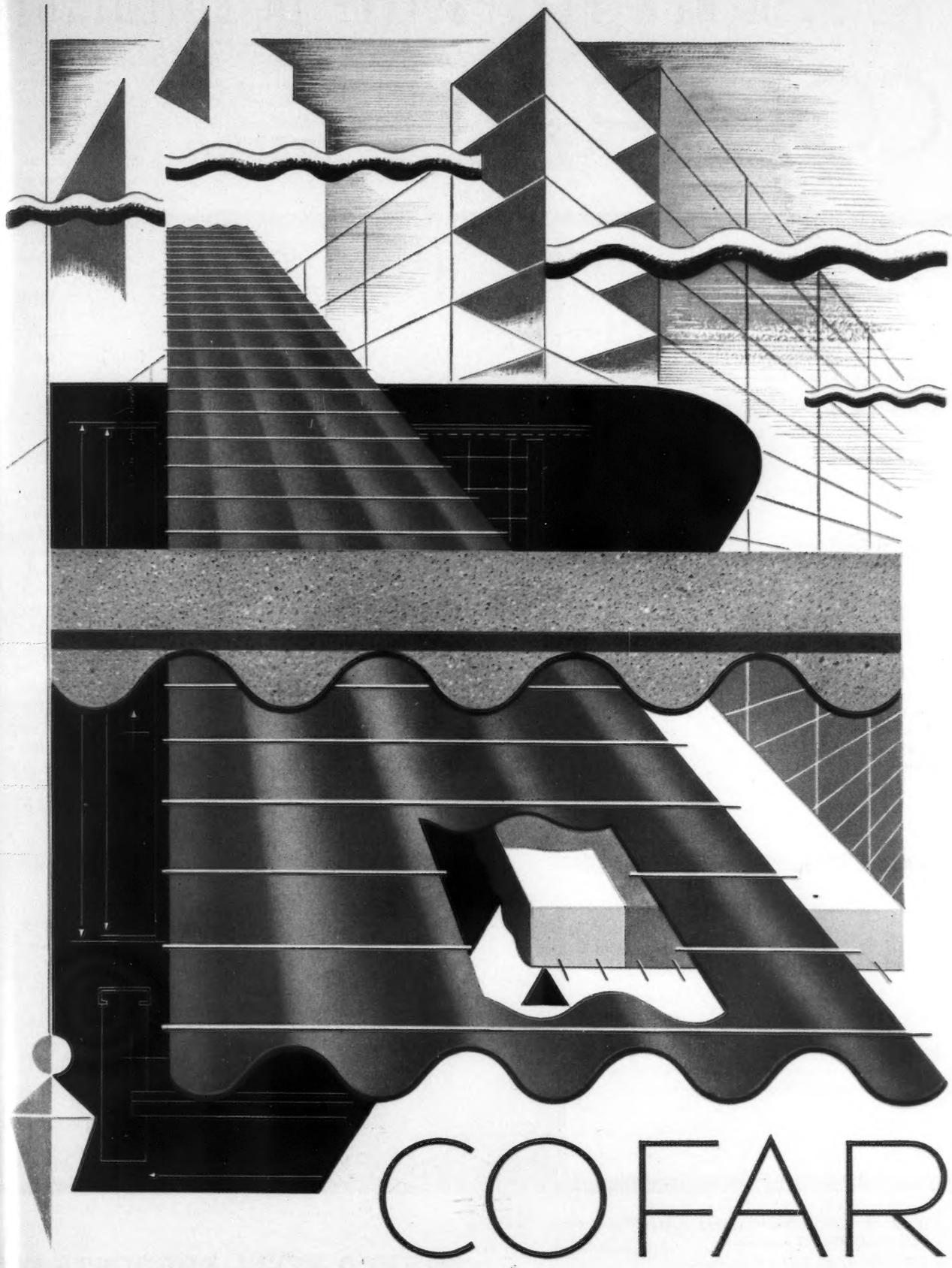
Governair Packaged Air Conditioners are designed to operate at peak efficiency—with all parts precision-matched to work together. And they're built to give years and years of low-cost trouble-free service.

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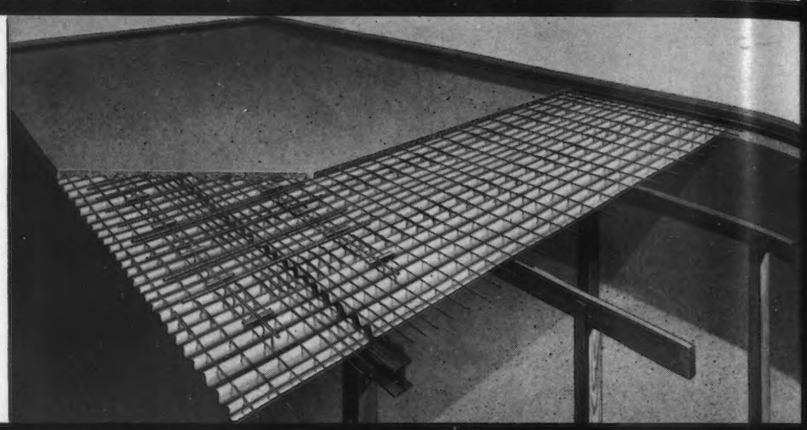
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- Reinforced concrete construction.
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- Positive reinforcement permanently anchored to and combined with structural concrete.
- Concrete floors and roofs without forms.

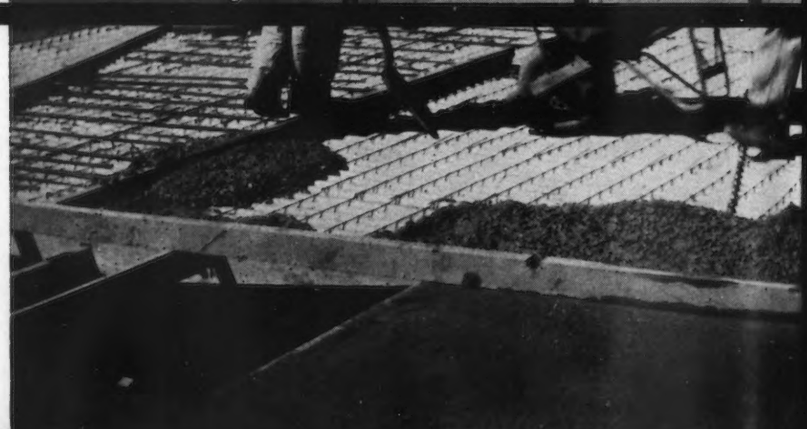
STRENGTH UNLIMITED

COFAR! Deep-corrugated steel, 100,000 psi and stronger (the main reinforcement), and T-wires (temperature reinforcement) in one manufactured product . . . all the positive steel needed in the structural concrete slab! Design follows normal concrete structural procedures. Full range and design freedom is given concrete slab construction, with continuity and weight saving. Hot-dip heavy galvanizing insures building-life permanence. Build strong . . . build COFAR.



TIME AND MONEY SAVED

COFAR makes concrete floor and roof construction a one-stage operation . . . no forms to build and tear down. Construction is clean and fast. Concreting in multi-story buildings moves indoors out of the weather. Large or small, your building is better, costs less with COFAR.



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Bright, clean, corrugated-pattern COFAR ceilings give the new look to many homes. Fire resistant for any exposure with lightweight modern ceiling protection. COFAR saves enough head room and deadweight to add stories to skyscrapers. Business, office or residential . . . COFAR is the answer.



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- *ESTIMATES and COSTS for any COFAR project.*
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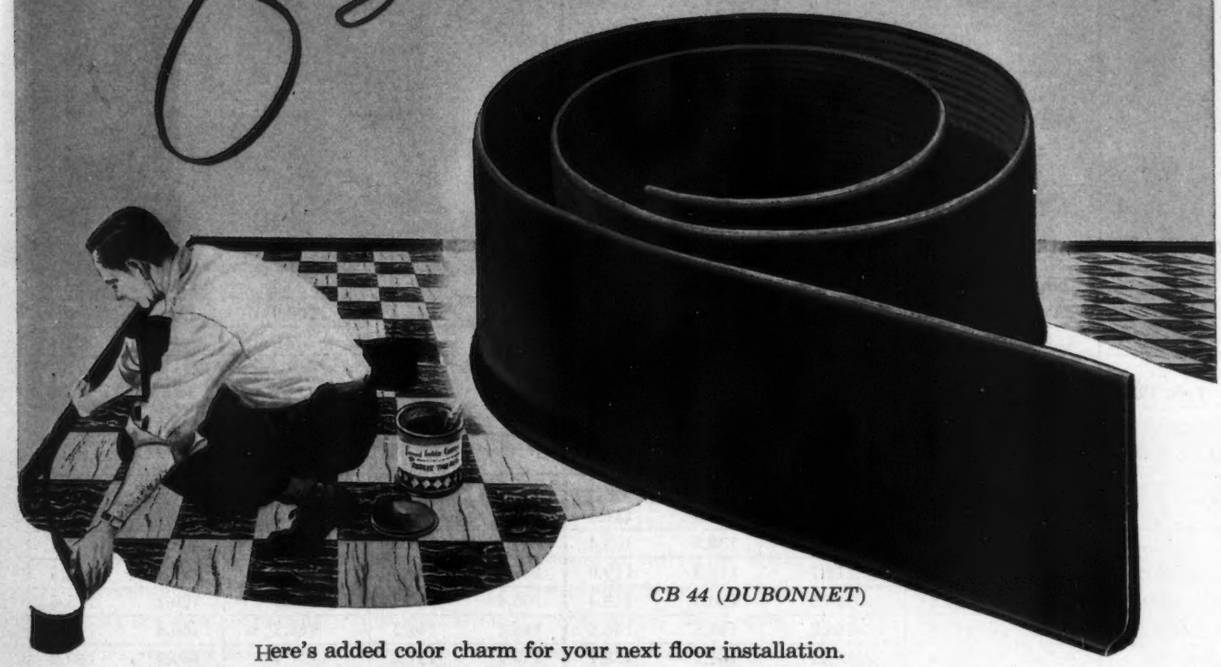
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VINYL PLASTIC COVE BASE TRIM

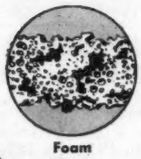
in 8 smart colors!



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Here's added color charm for your next floor installation. Fremont continuous length Cove Base now comes in permanent colors that never need refinishing,—nothing to chip or peel. Properly adhered on either flat or curved wall surfaces, it gives a low-cost base trim protection from dirt, vermin, water or scuffing. It cleans easily with a damp cloth. For best installation, Fremont Rubber Tile Adhesive is recommended. Plan your next job with the perfect finish—Fremont Cove Base in color.

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Vinyl Plastic Cove Base

Please send me the new brochure on Cove Base in colors:

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CONSTRUCTION COST INDEXES

Labor and Materials

United States average 1926–1929 = 100

Presented by Clyde Shute, manager, Statistical and Research Division, F. W. Dodge Corp., from data compiled by E. H. Boeckh & Assocs., Inc.

NEW YORK

Period	Residential Brick	Residential Frame	Apts., Hotels Office Bldgs. Brick and Concr.	Commercial and Factory Bldgs. Brick and Concr.	Commercial and Factory Bldgs. Brick and Steel
1925	121.5	122.8	111.4	113.3	110.3
1930	127.0	126.7	124.1	128.0	123.6
1935	93.8	91.3	104.7	108.5	105.5
1939	123.5	122.4	130.7	133.4	130.1
1940	126.3	125.1	132.2	135.1	131.4
1945	160.5	161.7	156.3	158.0	155.4
1946	181.8	182.4	177.2	179.0	174.8
1947	219.3	222.0	207.6	207.5	203.8
1948	250.1	251.6	239.4	242.2	235.6
1949	243.7	240.8	242.8	246.4	240.0
Dec. 1950	268.1	266.5	258.5	259.9	257.2
Jan. 1951	270.6	269.3	260.6	262.2	259.4
Feb. 1951	273.3	271.5	262.4	263.6	262.1
	% increase over 1939				
Feb. 1951	121.3	121.8	100.8	97.6	101.5

ATLANTA

Period	Residential Brick	Residential Frame	Apts., Hotels Office Bldgs. Brick and Concr.	Commercial and Factory Bldgs. Brick and Concr.	Commercial and Factory Bldgs. Brick and Steel
1925	86.4	85.0	88.6	92.5	83.4
1930	82.1	80.9	84.5	86.1	83.6
1935	72.3	67.9	84.0	87.1	85.1
1939	86.3	83.1	95.1	97.4	94.7
1940	91.0	89.0	96.9	98.5	97.5
1945	132.1	133.9	123.2	122.8	123.3
1946	148.1	149.2	136.8	136.4	135.1
1947	180.4	184.0	158.1	157.1	158.0
1948	199.2	202.5	178.8	178.8	178.8
1949	189.3	189.9	180.6	180.8	177.5
Dec. 1950	205.4	208.0	195.3	192.0	195.3
Jan. 1951	209.2	210.8	200.0	199.0	200.4
Feb. 1951	211.2	212.8	201.0	200.0	201.1
	% increase over 1939				
Feb. 1951	144.7	156.7	111.4	105.3	112.4

ST. LOUIS

1925	118.6	118.4	116.3	118.1	114.4
1930	108.9	108.3	112.4	115.3	111.3
1935	95.1	90.1	104.1	108.3	105.4
1939	110.2	107.0	118.7	119.8	119.0
1940	112.6	110.1	119.3	120.3	119.4
1945	152.8	152.3	146.2	148.5	145.6
1946	167.1	167.4	159.1	161.1	158.1
1947	202.4	203.8	183.9	184.2	184.0
1948	227.9	231.2	207.7	210.0	208.1
1949	221.4	220.7	212.8	215.7	213.6
Dec. 1950	243.0	239.7	229.9	233.3	229.9
Jan. 1951	247.2	243.2	232.6	235.6	233.8
Feb. 1951	248.8	245.2	233.2	236.1	234.7
	% increase over 1939				
Feb. 1951	125.8	129.2	96.5	97.1	97.2

SAN FRANCISCO

1925	91.0	86.5	99.5	102.1	98.0
1930	90.8	86.8	100.4	104.9	100.4
1935	89.5	84.5	96.4	103.7	99.7
1939	105.6	99.3	117.4	121.9	116.5
1940	106.4	101.2	116.3	120.1	115.5
1945	146.2	144.3	144.5	146.8	147.9
1946	159.7	157.5	157.9	159.3	160.0
1947	193.1	191.6	183.7	186.8	186.9
1948	218.9	216.6	208.3	214.7	211.1
1949	213.0	207.1	214.0	219.8	216.1
Dec. 1950	235.2	232.0	228.4	229.5	228.9
Jan. 1951	240.2	235.4	235.0	239.1	235.5
Feb. 1951	242.5	238.3	236.7	240.4	240.7
	% increase over 1939				
Feb. 1951	129.6	140.0	101.6	97.2	106.6

The index numbers shown are for combined material and labor costs. The indexes for each separate type of construction relate to the United States average for 1926–29 for that particular type — considered 100.

Cost comparisons, as percentage differences for any particular type of construction, are possible between localities, or periods of time within the same city, by dividing the difference between the two index numbers by one of them; i.e.:

index for city A = 110
index for city B = 95

(both indexes must be for the same type of construction).

Then: costs in A are approximately 16 per cent higher than in B.

$$\frac{110-95}{95} = 0.158$$

Conversely: costs in B are approximately 14 per cent lower than in A.

$$\frac{110-95}{110} = 0.136$$

Cost comparisons cannot be made between different types of construction because the index numbers for each type relate to a different U. S. average for 1926–29.

Material prices and wage rates used in the current indexes make no allowance for payments in excess of published list prices, thus indexes reflect minimum costs and not necessarily actual costs.

These index numbers will appear regularly on this page.



Here is Total Flexibility

These walls can be moved quickly ...conveniently...economically

● By tomorrow morning this executive office could be converted into several smaller offices or made part of a large general office if necessary to meet the changing needs of business. Mills Movable Metal Walls make quick changes like these possible with a minimum of labor and expense.

Mills Walls combine this efficient movability with permanent solidity, structural stability and attractive appearance. Insulated and soundproofed, they are easily erected and require no maintenance except occasional washing of their baked-on enamel finishes.

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Maximum mobility is the result of many Mills features developed through more than 30 years of perfecting this demonstrably superior system. Mills exclusive all-welded panel construction assures permanent true alignment of walls no matter how many times they are moved. Units are interchangeable, whole sections may be moved intact, all materials are reused.

MILLS *Movable* **METAL WALLS**



Immovable walls, "frozen space", handicap any building. Why not investigate the possibility of installing Mills Movable Metal Walls now? Write for Mills Catalog No. 51 and specific recommendations to meet your specific space needs.



Thoroughgood House (17th century), Princess Anne County, Va. F. B. Johnson photo



Harwood House, Annapolis, Md. (18th century); doorway by William Buckland. R. C. Smith photo



The Lindens (18th century), transferred from Danvers, Mass., to Washington, D. C. John O. Brostrup photo



Miller's House, Milbach, Pa. (18th century). Courtesy Philadelphia Museum of Art



Graeme Park, Horsham, Pa. (1722). Cortland V. D. Hubbard photo. All photos above from *The Dwellings of Colonial America*

REQUIRED READING

EARLY AMERICAN HOUSES

The Dwellings of Colonial America. By Thomas Tileston Waterman. The University of North Carolina Press (Chapel Hill, N. C.), 1950. 7¼ by 10¼ in. 320 pp., illus. $10.00.

To anyone interested in the architectural history and development of the United States this volume will be of tremendous interest. For first of all it contains an account of "The Settling of America," sketching the traditions which influenced the buildings erected by the first settlers; and next it traces "though necessarily in broad lines, the pattern of development in the building of colonial America's dwellings. . . ." The period it covers is from the first English settlement to the close of the Revolution. The area with which it is concerned is that occupied by the United States in 1793.

Mr. Waterman has chosen to present his material geographically, starting with the Southern Colonies, progressing northward through the Delaware Valley to the Hudson Valley and New England. The choice was a logical one, since climate, local materials, and the traditions brought by the settlers from many parts of Europe varied widely from one region to another. Rather unexpectedly, the chapter on New England is the shortest of the four. This, Mr. Waterman explains, is because New England was settled densely, and quickly developed a regional style to which substantially all of its houses adhere. This was true also in the Hudson Valley, he continues, but in the other two regions "there were many national strains among the settlers which produced numerous expressions that require lengthy discussion."

The book is handsomely illustrated with some 250 photos, a great many of them full-page reproductions. Plans are numerous. There is a three-page bibliography as well as a detailed glossary of architectural terms and a very complete index. End-papers are maps of "The Northern United States as they were in 1783." All in all, this new volume is a worthy successor to Mr. Waterman's earlier THE MANSIONS OF VIRGINIA.

NORWAY

Norwegian Architecture Throughout the Ages. Compiled by Eyvind Alnaes, Georg Eliassen, Reidar Lund, Aarne Pedersen, Olav Platou. H. Aschehoug & Co. (W. Nygaard, Oslo, Norway), 1950. 11 by 9½ in., 424 pp., illus. $15.00.

REVIEWED BY FELLO ATKINSON

Exactly a century passed between the Norwegian visit of Mary Wollstonecraft, formidable bluestocking mother-in-law of the poet Shelley, and that of William Morris, in 1896. Incongruous comparison perhaps; she young, vital, opinionated, the first modern woman — travelling medievally, roughing it and thrilled by the archaism of it all, and he,

(*Continued on page 35*)

Rolling Steel DOORS

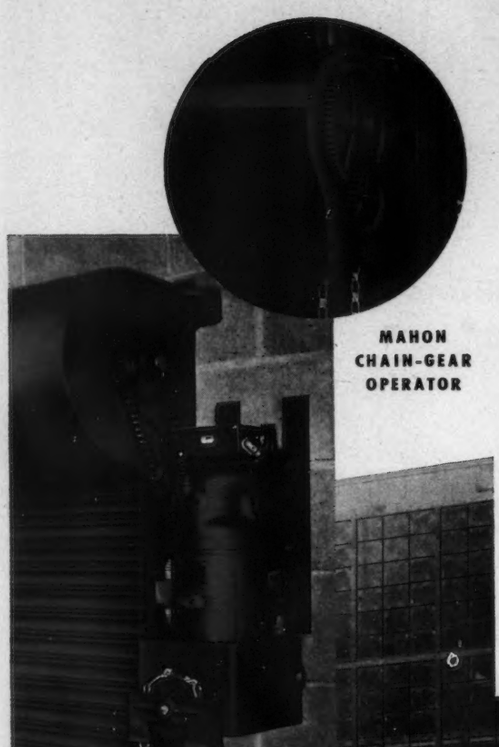
Manually, Mechanically, or Power Operated

For railroad openings, truck openings, or any vehicle opening which is subject to frequent use, a good rolling steel door is the logical answer . . . they provide maximum protection against intrusion and fire . . . they occupy no usable space inside or outside the door opening . . . their quick opening, quick closing vertical action, with push-button control, saves time, and, their all-metal construction assures a life-time of continuous trouble-free service. Before you buy, check the specifications of Mahon Rolling Steel Doors . . . note the materials used, type of bearings, oven-baked protective coating applied to curtain slats prior to roll-forming, and other provisions for long life. You may find complete information on Mahon Rolling Steel Doors, including specifications, in Sweet's Files. If you do not have access to Sweet's, write for Catalog G-50.

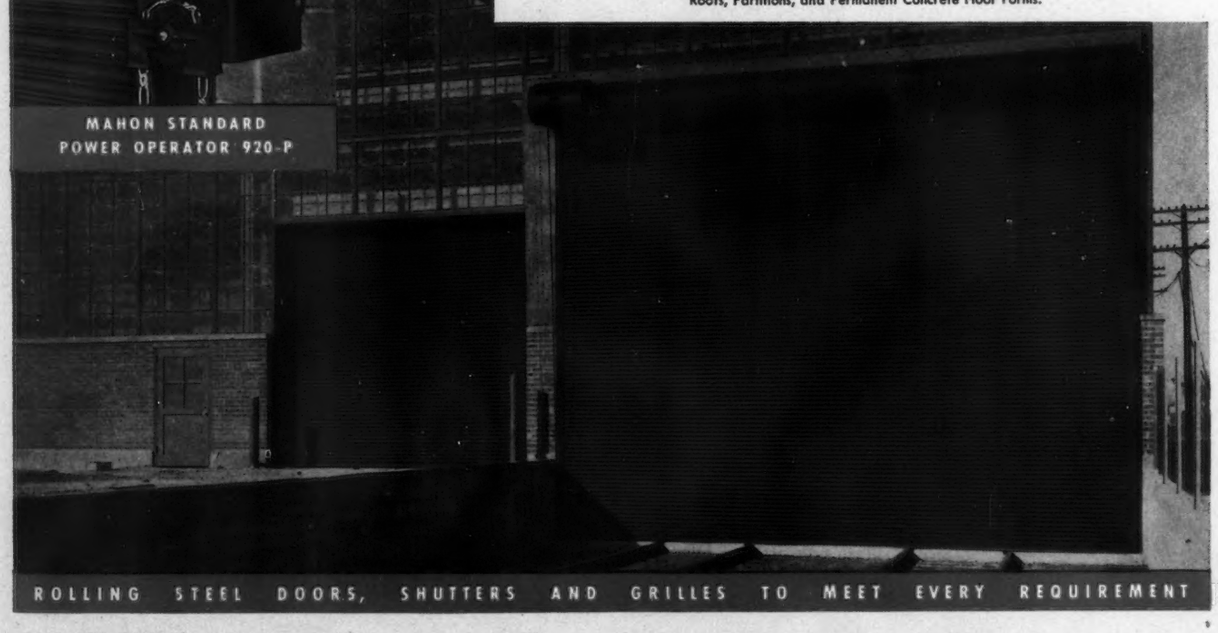
THE R. C. MAHON COMPANY

Detroit 34, Michigan • Chicago 4, Illinois • Representative in Principal Cities

Manufacturers of Rolling Steel Doors, Grilles, and Automatic Closing Underwriters' Labeled Rolling Steel Doors and Fire Shutters; Insulated Metal Walls, Steel Deck for Roofs, Partitions, and Permanent Concrete Floor Forms.



MAHON CHAIN-GEAR OPERATOR



MAHON STANDARD POWER OPERATOR 920-P

ROLLING STEEL DOORS, SHUTTERS AND GRILLES TO MEET EVERY REQUIREMENT

Typical Installation of Mahon Power Operated Rolling Steel Doors in a Double Railroad Opening and a Truck Opening in a Modern Industrial Plant.

MAHON



We doubt that you've worked on many clubhouses like *this* one lately.

We haven't helped heat any, either.

But we *can* help heating engineers and contractors provide the proper thermal environment for any client—anywhere—in any kind of structure.

We have a lot of literature on the automatic control of all phases of heating, ventilating and air conditioning. Information you should have in your files.

And we have a lot of very well-informed control engineers—in our 89 different offices—who have a lot *more* information right at their finger tips.

We sincerely believe we can help you on any project that poses problems of control of any kind—for *control* is Honeywell's business.

So, why not *talk to Honeywell?* Why not *write* to Honeywell for complete information on the equipment discussed across the page? And why not do it *now?*

MINNEAPOLIS
Honeywell
First in Controls

REQUIRED READING

(*Continued from page 32*)

who in despair at the ugliness of industrialism had turned to the middle ages for refreshment: Morris, the dying titan, prematurely aged, going on a luxury orient cruise, chilled in spirit by the sight of the very fjörds and mountains whose sagas had been his inspiration. Yet the interval between saw the rise of the English romantic-radical movement of which both were members, and for which Norway was one of the few beacons of sturdy independence against the arrogant tyrannies of art and men. It saw also a Norwegian intellectual renaissance culminating in the art of Grieg and Ibsen.

Yet this very isolation, albeit sturdy but let us state inevitable, which gave peculiar, if haunting and melancholy vitality to Norwegian music and literature, resulted in a certain sterility in the visual arts. The Scandinavian countries, to a greater or lesser degree, suffer in the arts from sparse and static populations and consequently small audience, and in Norway this is particularly so. Building there has always been sporadic and architecture has never been a great art, but rather a peasant craft, often superficially emulating or copying foreign models.

While there are modern buildings and renaissance buildings in Norway there was no indigenous renaissance and as yet there is no modern movement. But there is a great deal of lovely vernacular buildings, akin for the most part to the sagas and the songs and the anonymous crafts like boatbuilding and cheesemaking, which cannot be judged academically and intellectually but only instinctively and sensuously. Looking through this book, which largely consists of pictures and plans with a brief historical background, I find it frankly rather dreary, not because the buildings aren't quite lovely, but because I believe the authors have failed to express their real significance and have dealt with them as we would treat the high architecture of Italy and England. They have isolated them from their landscape and the people and their crafts. The simple log sæters with their turf roofs, instinctively grouping in response to climate and contour; the dark barbaric stave-churches, spiking the air and clawing at the narrow skies above the deep valleys, the huddled jostling quay-

(*Continued on page 36*)



In apartment buildings, for example...

Question: Is there any way to control the temperature in an apartment building so that all tenants will be satisfied at the same time?

Answer: There certainly is—by installing Honeywell Personalized Heating Control. With PHC, each apartment has its own individual thermostat—each tenant can select the temperature most comfortable for him.

Question: But we've got to consider fuel bills. Won't they go up—with every tenant free to regulate his own heat?

Answer: On the contrary, they'll go down—as much as 20% annually! Surveys show owners often have to overheat a whole building to satisfy the 10% who like to live at 76°. Yet, most tenants want no more than 72°. Their PHC will regulate to that temperature—and save your client money.

Question: How about the added cost of PHC? Is individual control equipment more expensive to install than ordinary equipment?

Answer: Initially, Personalized Heating Control does cost more—although probably less than you think. But PHC is *not* just an added cost. It's an *investment* that pays definite, worth-while dividends. Experience has shown tenants will gladly pay a little extra for the greater comfort individual controls give. In just a few years, this extra will pay for the thermostats and valves. And from then on, the added income will benefit your client.

Gentlemen: Please send me detailed information about Personalized Heating Control for apartment buildings.

Name _____ Firm Name _____

Address _____

Send this coupon today to: Dept. AR-5-82, Minneapolis 8, Minnesota

MINNEAPOLIS **Honeywell**

First in Controls

Secret Of Superiority!



REQUIRED READING

(*Continued from page 35*)

side warehouses and houses have a tremendous visual vitality while even the rather naive "classical" civic buildings of the 18th and 19th centuries have great charm. Isolated as these buildings are here from the environment which molded them, they are emasculated. For the most part the photographs are neat little labelled packages, often very small and taken from afar off, all apparently on the same dull day, hardly conscious of the sparkling winter snow and the long shadows of the midnight sun. These buildings should have swelled out beyond the margins and been dramatised as their builder-owners would have sensed them, returning at evening through the pine woods, between the sails returning to harbor, from the rooftops where they paused after relaying the turf, suddenly revealed on some plateau after the long climb up the mountainside or from some corner where they had dozed in the sun observing things very near. I have not seen Norway since I was very young and perhaps this is childish nostalgia disappointed at failing to rediscover memories. Such buildings may be better seen with the eyes of a child while here they are seen with the tired apologetic eyes of the wise. Indeed I hazard that it is this same sophistication, too conscious of good taste and therefore too afraid to venture which is corroding the virility of so much of Scandinavia's art today. When one looks at her buildings one hears Ibsen's Solness' bitter cry, "I build no more church towers nor churches either . . . only homes for human beings . . ." and one's heart warms to Hilda for her vulgar robust yearnings (fully realizing the Eastlake like little horrors she probably had in mind) when she pleads "Couldn't you build a little bit of a church tower over these houses as well . . . ?"

BOOKS RECEIVED

A Guide to Contemporary Architecture in Southern California. By Bonenberger and Harris. Watling and Co., Los Angeles — A guidebook to outstanding architecture in this region.

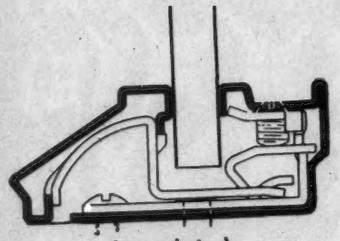
(*Continued on page 276*)

for DAY and NIGHT SELLEVISION

Brasco
SAFETY-SET
STORE FRONTS



Architect: F. Dano Jackley
Baltimore, Maryland



(actual size)
SAFETY-SET SASH No. 109
NOTE HEIGHT, ONLY 25/32"

THE lively business reported by stores equipped with modern Brasco Fronts is generally credited to advanced *Sell*evision* design incorporated by the architects. 'Round the clock if you want it, the revealing magic of *Sell*evison catches the eye of the passer-by and directs it within.

With Brasco sash members reduced in height to only 25/32" larger glass areas are revealed and maximum *Sell*evision attained.* At the same time the deeper, safer Brasco grip on the glass is fully and dependably maintained. The wide variety of interchangeable sash and sill assemblies available in both heavy gauge stainless steel and anodized aluminum permits handsome custom designed effects with standard stock members.

The simplified, positive operation of our time-tested setting mechanism speeds assembly and glazing. Installations require stock size millwork only which saves time and reduces costs. Full size construction details of the entire Brasco line are immediately available. *Please address Dept. R 105.* *©

see our CATALOG in SWEET'S FILE ARCHITECTURAL

★ ★ A COMPLETE LINE FOR EVERY DESIGN ★ ★

BRASCO MANUFACTURING CO.
HARVEY • (Chicago Suburb) • ILLINOIS
Specialists in Metal Store Front Construction for more than 40 Years

how MOSAIC tile helped make

THE PACESETTER HOUSE OF 1951

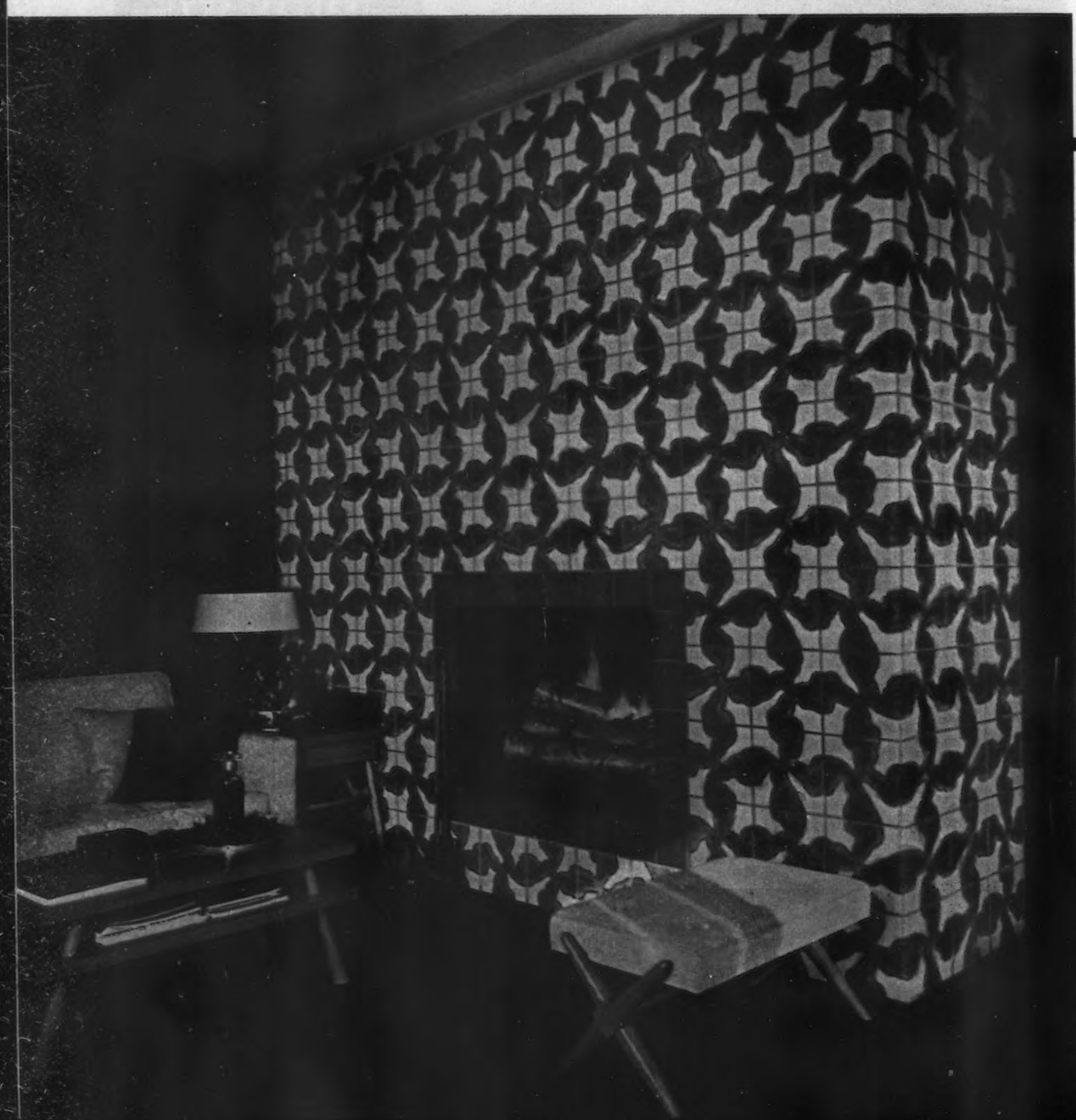
a spectacular success

The editors of "House Beautiful" have pioneered some unusually practical uses for Mosaic Tile in their *Pacesetter House for 1951.*

Architect—Julius Gregory
Builder—Robert Chuckerow Construction Company
Tile Contractor—R. L. Leonardi, Inc.



The "House Beautiful" Pacesetter House of 1951, at Dobbs Ferry, New York.





IN THE OUTDOOR living room the rich, earthy, red of the Mosaic Granitex Tile floor blends perfectly with its garden setting. Continuous traffic from the garden areas across this floor will never mar its surface or texture. Neither sun nor weather will change its permanent color. This floor may be hosed daily, for Mosaic Tile is impervious to moisture and stains.

Floor—Granitex Mosaic, Pattern No. 1779-A3.



BLUE FAIENCE TILE is an ever-beautiful finish on the sides of this combination serving bar and cooking peninsula. The hand-crafted appearance of Faience aids in blending the casual character of the living-dining area with the trim efficiency of this ultra-modern kitchen. Other types of Mosaic Tile are used on work counters, splash boards and walls for the utmost in easy cleaning and lasting beauty.

Peninsula—6" x 6" Faience color No. 2102.



MOSAIC TILE in this bathroom will turn in top performance for the life of the house because water and moisture will never effect the tile nor the manner in which it is set.

The vanity top and the floor are unglazed ceramics, an especially hard and durable type of Mosaic Tile, with permanent color throughout its wear-proof body.

Harmonitone wall tile color—No. 161.
Vanity top and floor color—No. 201 Velvetex.

From these pictures, you can visualize how Mosaic Tile, an extremely practical material —and used in every room in the *Pacesetter House*—may be used on both vertical and horizontal surfaces.

For example, Mosaic Faience Tile, which makes the fireplace wall so outstanding, offers opportunities of great interest if planned for elevator lobbies and for other large surfaces where everlasting beauty, utility and rock-bottom maintenance are required. For such uses, the cost of Mosaic Faience Tile will be no more than that of equally sturdy materials. *In fact, it will probably be less.*

There are other patterns you will want to see. Or, taking a clue from this job and from such other jobs as the ceramic Mosaic wall in Harvard University's recently completed graduate school, you may wish to develop your own design for the job you plan for Mosaic Tile.

In either case, Mosaic's Design Department is at your service. There is no obligation.

Center of attraction in *Pacesetter House* is this truly magnificent and really distinguished floor-to-ceiling fireplace wall, which serves also as a decorative partition between living and dining areas. Made of Mosaic Faience Tile, in a special design, its colors are there to stay; can't fade or bleach. Floor of living and dining area is Granitex Mosaic, which is also used on the floor of the outdoor living room.

—fireplace wall Mosaic Faience Tile, pattern No. 6056.

—floor Granitex Mosaic, pattern No. 1779-A3.

ON THE FLOOR at the windows in the master bedroom, Mosaic Faience Tile, in a delightful green, is used as an "indoor greenhouse." Here plants live in ideal atmosphere, on a floor that will never stain and which is so easy to clean.

Mosaic Faience Tile—Color No. 2164.



NO MATERIAL is more practical for window sills and window shelves. Here Mosaic Granitex are used as a broad under-window shelf—fine for plants, books, knick-knacks—an ideal combination of durability and decorative texture.

Shelf is Granitex Mosaic, color No. 1228.





THE DINING ROOM FLOOR is a continuation of the living room floor, a feature that contributes to the feeling of spaciousness which is apparent throughout the house.

Floor—Granitex Mosaic, Pattern No. 1779-A3.



THE PACESETTER HOUSE is open to the public until July 1. We'd like you to see it if you are in the East. It's at Dobbs Ferry, just up the Hudson River from New York.

Mosaic Tile offers a great deal to modern, contemporary design. No other material is more functional. No other material provides so much in color, long life or freedom from maintenance.

The Mosaic Tile Company offers freely of its assistance to those architects, builders and owners who want to investigate our products for their jobs. Ask any Mosaic representative or write Dept. 30-3 The Mosaic Tile Company, Zanesville, Ohio.

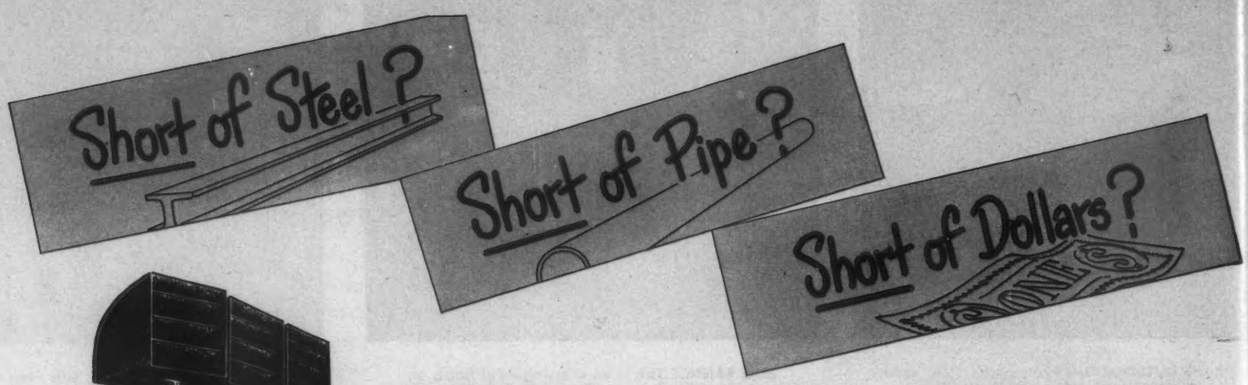
THE MOSAIC TILE COMPANY

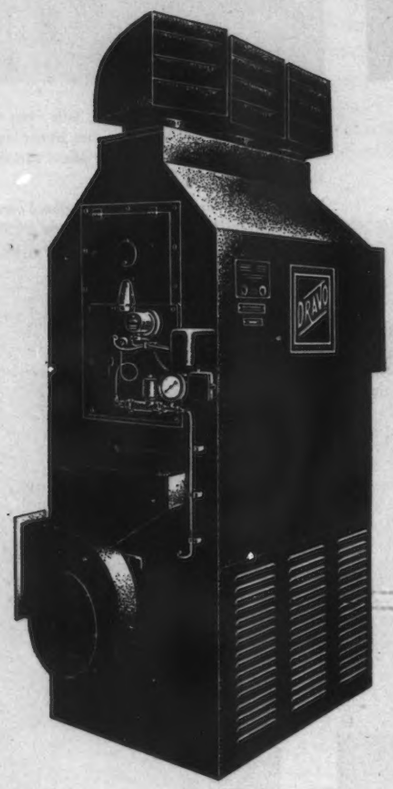
General Offices—Zanesville, Ohio

Member Tile Council of America

MOSAIC

SHOWROOMS, OFFICES AND WAREHOUSES IN PRINCIPAL CITIES ACROSS THE NATION.





DRAVO HEATERS SAVE STEEL,

MONEY—FUEL—and MAN HOURS

The steel needed for a heating system *can* be slashed from 50% to 70% for the representative open-space industrial structure shown below . . . by using the direct-fired warm air heating method with Dravo "Counterflo" Heaters! This conservation of steel, vitally important today, adds another saving to the long list of economies in money, fuel and labor effected by this heating method.

The chart below gives the detailed comparative story. Every system is equivalent in Btu output. Steel requirements for the 13 methods have been carefully and conservatively calculated.

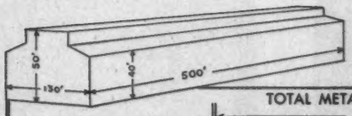
You will see that Dravo Heaters not only take LESS steel in each fuel classification . . . but that the HIGHEST steel requirement in a Dravo installation is *almost 50% less* than the LOWEST steel requirement in *any other* system!

Look at the contrast in *pipe* required! Jobs now held up by slow pipe deliveries can MOVE . . . if Dravo heaters are used!

Dravo "Counterflo" Heaters can expedite installation jobs for you! And the steel and pipe savings are just two of the many reasons why more and more "Counterflo" Heaters are being used in all types of structures.

DRAVO HEATERS HAVE EARNED HIGHEST INDUSTRIAL ACCEPTANCE BECAUSE THEY OFFER—

- **LOW FIRST COST . . . Users report 50% to 60% savings**
- **WORKING-ZONE WARMTH . . . Units heat 4,000 to 20,000 sq. ft.**
- **NO FUEL WORRIES . . . Burn oil or gas . . . readily converted**
- **AUTOMATICALLY CONTROLLED . . . On-off or modulating controls**
- **LOW OPERATING COST . . . 80-85% efficiency**
- **EASY INSTALLATION . . . Fuel, electric and exhaust connections only**
- **LONG LIFE—LOW MAINTENANCE . . . Stainless Steel combustion chamber**
- **TESTED—APPROVED . . . AGA and/or UL seal**
- **AVAILABLE . . . Immediate delivery, no delays**



Each heating system compared below was sized to make up a calculated 12,000,000 Btu heat loss in this representative industrial building.

WRITE TODAY FOR BULLETIN KL-526-2435

TOTAL METAL REQUIREMENTS FOR VARIOUS HEATING SYSTEMS WITH IDENTICAL 12,000,000 Btu LOAD

COMPONENT	GAS FIRED					OIL FIRED					COAL FIRED		
	DRAVO WARM AIR	HIGH PRESSURE CONVENTIONAL WATER TUBE BOILER	HIGH PRESSURE PACKAGED STEAM GENERATOR	LOW PRESSURE CONVENTIONAL WATER TUBE BOILER	LOW PRESSURE PACKAGED STEAM GENERATOR	DRAVO WARM AIR	HIGH PRESSURE CONVENTIONAL WATER TUBE BOILER	HIGH PRESSURE PACKAGED STEAM GENERATOR	LOW PRESSURE CONVENTIONAL WATER TUBE BOILER	LOW PRESSURE PACKAGED STEAM GENERATOR	DRAVO WARM AIR	HIGH PRESSURE CONVENTIONAL WATER TUBE BOILER	LOW PRESSURE CONVENTIONAL WATER TUBE BOILER
BASIC HEAT GENERATORS	26,400	38,000	62,000	38,000	62,000	26,400	38,000	62,000	38,000	62,000	27,450	38,000	38,000
PIPING—Oil—Steam Boiler Room—Gas	9,096	15,490	15,490	35,308	35,308	4,352	15,790	15,790	35,608	35,608		14,990	34,808
TANKS—Oil—Blow-off Condensate		3,500	1,500	1,500	1,500	13,000	16,500	14,500	14,500	14,500		3,500	1,500
UNIT HEATERS including Traps & Starters		21,240	21,240	21,240	21,240		21,240	21,240	21,240	21,240		21,240	21,240
STACKS & BREECHING	1,200	4,000	400	4,000	400	1,200	4,000	400	4,000	400	1,200	4,000	4,000
PUMPS—Fuel Oil Auxiliary Oil—Boiler Feed		1,000	1,000	1,000	1,000	400	1,400	1,000	1,400	1,000		1,000	1,000
STOKERS & FANS—including Dust Collectors Fuel Oil Preheaters							2,000		2,000		23,850	15,000	15,000
STRUCTURAL STEEL Boiler House Foundation Reinforcing		7,000	2,000	7,000			7,000	2,000	7,000			7,000	7,000
TONS of STEEL REQUIRED	DRAVO **18**	**45**	**52**	**54**	**61**	DRAVO **23**	**53**	**58**	**62**	**67**	DRAVO **26**	**52**	**61**

DRAVO CORPORATION

HEATING DEPARTMENT, DRAVO BUILDING, PITTSBURGH 22, PA.

Sales Representatives in Principal Cities

Manufactured and sold in Canada by Marine Industries, Ltd., Sorel, Quebec

Same Body . . . Different Dress!



ELECTRO
originators of the "BASIC UNIT"



Easily interchangeable luminaires let you dress your Electro "Basic Unit" in 7 different styles. Lighting fashions change but the installation you specify today will never be "dated" with ELECTRO'S "Basic Unit"—the one fluorescent fixture designed for quick, easy, interchangeability of luminaires! This important feature for the future of your installations helps you meet today's shortages, too! Any one of ELECTRO'S 7 SMART COMMERCIAL LUMINAIRES are designed to fit the "Basic Unit" and help get the job done on time.

Plan today for the modern installation of tomorrow—be prepared to meet defense-created shortages—specify the ELECTRO "Basic Unit." It means . . .

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WHEELING is "TOPS"



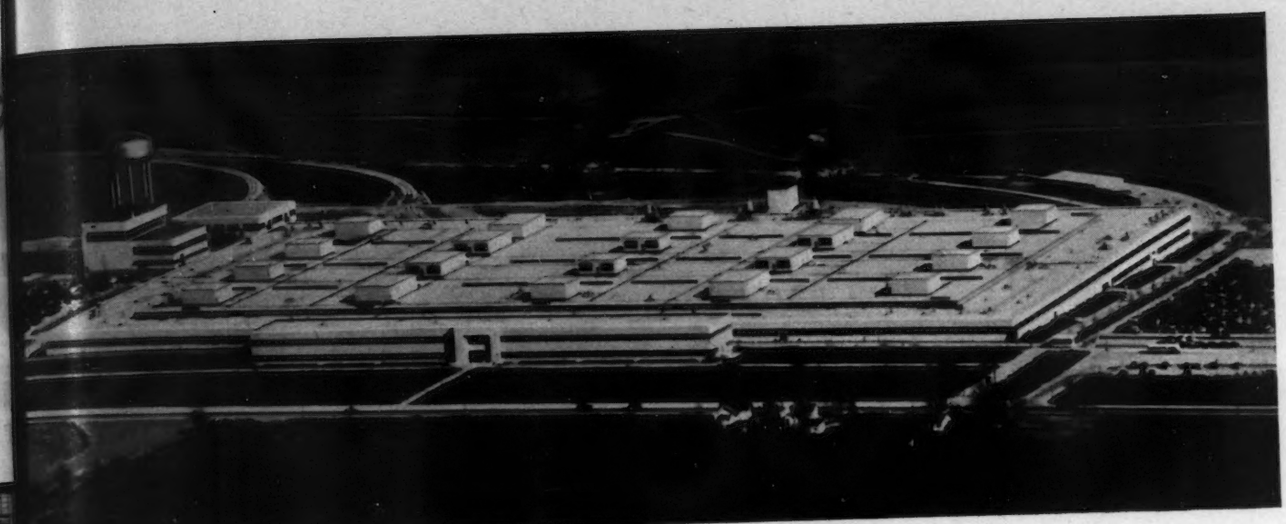
● **LIGHTER!** Saves weight two ways: because of lightness of Tri-Rib Sheets themselves, and because smaller dead load allows use of lighter supporting members!

● **FASTER!** Saves time through easy handling and through quicker fastening with welds or clips. Tri-Rib method also loses less time due to bad weather!

● **COSTS LESS!** Saves money in itself—and in allowing use of lighter supporting members. Roof of Tri-Rib usually costs less than any comparable type of roof!

WHEELING CORRUGATING COMPANY • WHEELING, WEST VIRGINIA

ATLANTA BOSTON BUFFALO CHICAGO COLUMBUS DETROIT KANSAS CITY LOUISVILLE MINNEAPOLIS NEW ORLEANS NEW YORK PH



for Western Electric

20 ACRES of Tri-Rib Roof Deck cover the world's largest telephone plant!

In its new plant at Indianapolis, Western Electric Company can make in one year more telephone sets than are in use *throughout all France!* To "top" its nearly 20 acres of manufacturing space, roofing contractors used more than 1,400 tons of Wheeling Tri-Rib Steel Roof Deck!

Insulation was designed to give the entire roof a 4-hour time lag in solar heat transmission. Because of the lightness of Tri-Rib Sheets, the dead load of the finished roof was reduced. The resulting reserve capacity in the structural steel is important in carrying such suspended loads as conveyors, piping and ducts.

Tri-Rib Steel Roof Deck for fast, economical roofing is only one of the many building materials for which architects, engineers and builders rely on Wheeling. In the complete line of Wheeling Building Materials, they will find products that are low-cost solutions to many construction problems.

Made of Cop-R-Loy, the Copper Alloyed Steel, Wheeling Tri-Rib Steel Roof Deck is designed to specifications adopted by A.I.S.I. for light gauge structures.

The Wheeling Line of Building Materials includes:

Steelcrete Reinforcing Mesh, Expanded Metal, Metal Lath and Metal Lath Accessories. Tri-Rib Steel Roof Deck, ExM Angle Partitions and ExM Vault Reinforcing to meet #10 Insurance Classification. *Write for descriptive literature and technical data.*

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CORRUGATING COMPANY
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VIRGINIA BUILDING MATERIAL DIVISION

IS NEW ORLEAN NEW YORK PHILADELPHIA RICHMOND ST. LOUIS

How compact





can an air conditioning system be?

That's what they were asking themselves in Dallas back in 1940. There was never any question that the new Mercantile National Bank Building would be air conditioned. All they asked was how.

And they asked everybody . . . studied all the types of air conditioning installations that could be used in a multi-room building. One stood out. This all-weather system:

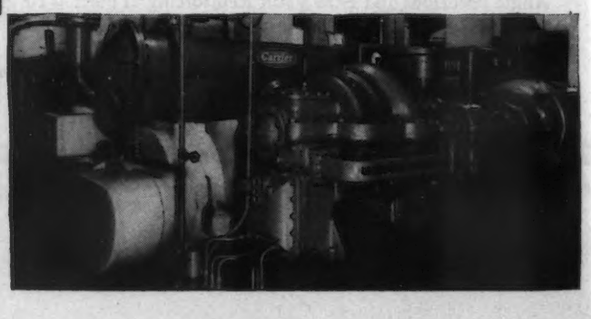
1. *Took from 75 to 85% less space than the other systems.*
2. *Permitted individual room control of temperature.*
3. *Had no moving parts in the room unit.*
4. *Centralized all mechanical elements for easier servicing.*

This was the system they selected — the Carrier Conduit Weathermaster System. Since then this same bank has built two additional buildings — the Mercantile Securities Building and the Mercantile Commerce Building.

The Carrier Conduit Weathermaster System was selected for both. We think that's pretty good evidence that the owners believe that is the best way to air condition a modern office building. Carrier Corporation, Syracuse 1, New York.

Above: Carrier Conduit Weathermaster Unit as installed in executive office.

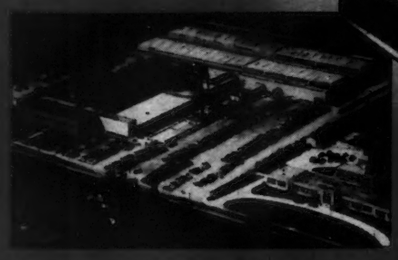
Below: the Carrier Centrifugal Refrigerating Machine.



Carrier

Air Conditioning Refrigeration Industrial Heating

the 1,000,000th B&G BOOSTER



Air view of B&G plant showing recent additions

In 1950, Bell & Gossett Company produced its 1,000,000th Booster Pump. Naturally, it is a matter of pride with us that, within our comparatively short life span, so large a number of B & G Pumps could be manufactured and sold.

Constructive, educational selling—better design—scrupulous workmanship have made the B & G Booster the preferred pump for forced hot water heating systems. It is evidence of their quality that thousands of B & G Boosters have been in operation for many years, without need for service of any kind.

We thank our legion of friends in the architectural field who have recognized product excellence and have rewarded our efforts to produce only the best. They have our assurance that in the future, as in the past, Bell & Gossett Products can be specified with confidence.

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TICKETS PLEASE...

Whether it's theaters, auditoriums, or sports arenas, you can count on American Blower Air Handling Equipment to keep your customers comfortably cool. The combination of American Blower fans and air washers, for example, forms a complete, compact method of comfort cooling large areas at low cost. The fan provides a supply of circulating outdoor air. The air washer cleanses, purifies and freshens the air while removing dust and water soluble odors. End result —a healthy volume of repeat business, more profits for you.



NUMBER PLEASE...

"Pleasant working conditions" is high on the list of reasons why people like to work for the telephone company. We're proud that many telephone buildings and exchanges around the country use American Blower air conditioning and ventilating equipment to create a fresh atmosphere indoors. They've found, as have many other businesses, that American Blower products provide not only high operating efficiency at low cost but their styling blends well with modern business interiors. Our nearest branch office will gladly furnish you with data and prices.



QUIET PLEASE...

Hot lights, plenty of activity and nervous tension call for good ventilation in radio and TV studios. Yet fans must operate quietly to prevent "mike" pickup. The quiet operating feature of American Blower fans makes them ideally suited for jobs like this. American Blower Sirocco Fans, for example, deliver more air per revolution than any other type fan, operate at lower tip speeds (making them unusually quiet), and save power.

MAY WE SERVE YOU?

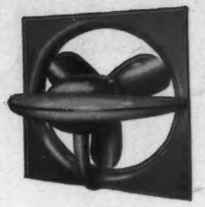
American Blower heating, cooling, drying, air conditioning and air handling equipment can do much toward improving comfort and efficiency in your business. For data, phone or write our nearest branch office.

AMERICAN BLOWER CORPORATION, DETROIT 32, MICHIGAN
CANADIAN SIROCCO COMPANY, LTD., WINDSOR, ONTARIO

Division of American Radiator & Standard Sanitary corporation



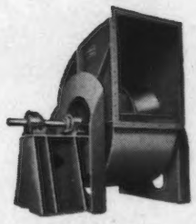
Unit Heaters



Ventura Fans



Air Conditioning Equipment



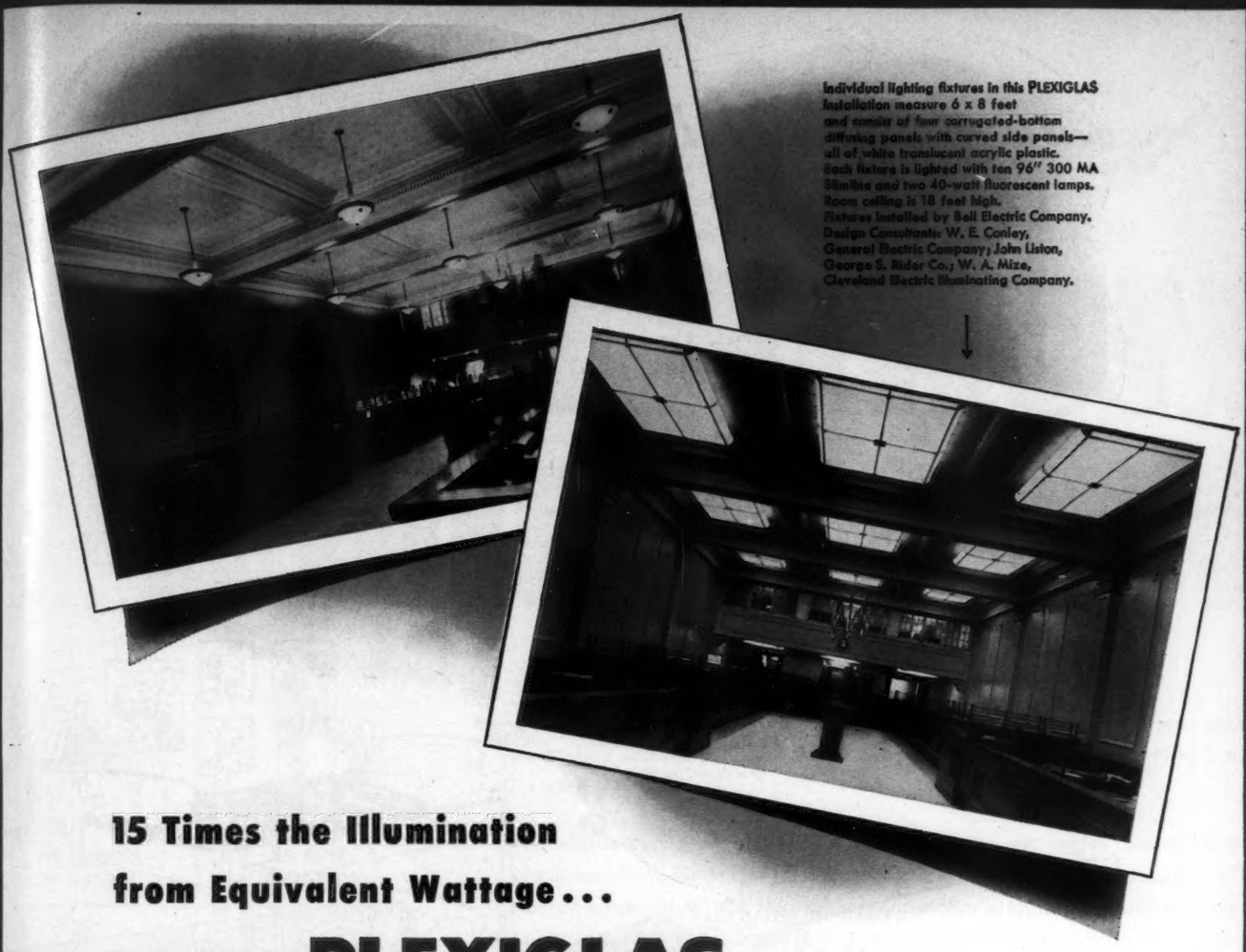
Industrial Fans



Utility Sets

YOUR BEST BUY AMERICAN BLOWER AIR HANDLING EQUIPMENT

Serving home and industry: AMERICAN-STANDARD • AMERICAN BLOWER • CHURCH SEATS • DETROIT LUBRICATOR • KEWANEE BOILERS • ROSS HEATER • TONAWANDA IRON



Individual lighting fixtures in this PLEXIGLAS installation measure 6 x 8 feet and consist of four corrugated-bottom diffusing panels with curved side panels—all of white translucent acrylic plastic. Each fixture is lighted with ten 96" 300 MA Slimline and two 40-watt fluorescent lamps. Room ceiling is 18 feet high. Fixtures installed by Bell Electric Company. Design Consultants: W. E. Conley, General Electric Company; John Liston, George S. Rider Co.; W. A. Mize, Cleveland Electric Illuminating Company.

15 Times the Illumination from Equivalent Wattage... Thanks to PLEXIGLAS

This is the banking room in Cleveland's Bank of Ohio—before and after PLEXIGLAS lighting was installed. Lighting-level averages have increased from 4 footcandles to 62 footcandles on the working surfaces—with no increase in wattage. Under these improved conditions it's not surprising that bank personnel are more cheerful, alert and efficient.

For *Quality Lighting*, ease of installation and low-cost maintenance, architects and illuminating engineers are specifying PLEXIGLAS in banks, offices and public buildings. PLEXIGLAS lighting fixtures diffuse light without absorbing it—transmit *full* illumination without glare. Lightness and strength permit installation with fewer, lighter supports. And resistance to age, weather, breakage and discoloration reduces maintenance charges to a minimum.

Write today for our new bulletins on PLEXIGLAS for Lighting. Full technical information; photographs of actual installations; descriptions of PLEXIGLAS types, patterns and colors. Ask us about your specific problem or application. We'll be glad to discuss it with you.

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• A steadily increasing percentage of PLEXIGLAS production, now at record levels, is required for the defense mobilization program. The supply available for civilian applications is limited.

PLEXIGLAS is a trade-mark, Reg. U. S. Pat. Off. and in principal foreign countries.
Canadian Distributor: Crystal Glass & Plastics, Ltd.
54 Duke Street, Toronto, Ont.

CHEMICALS FOR INDUSTRY

ROHM & HAAS COMPANY

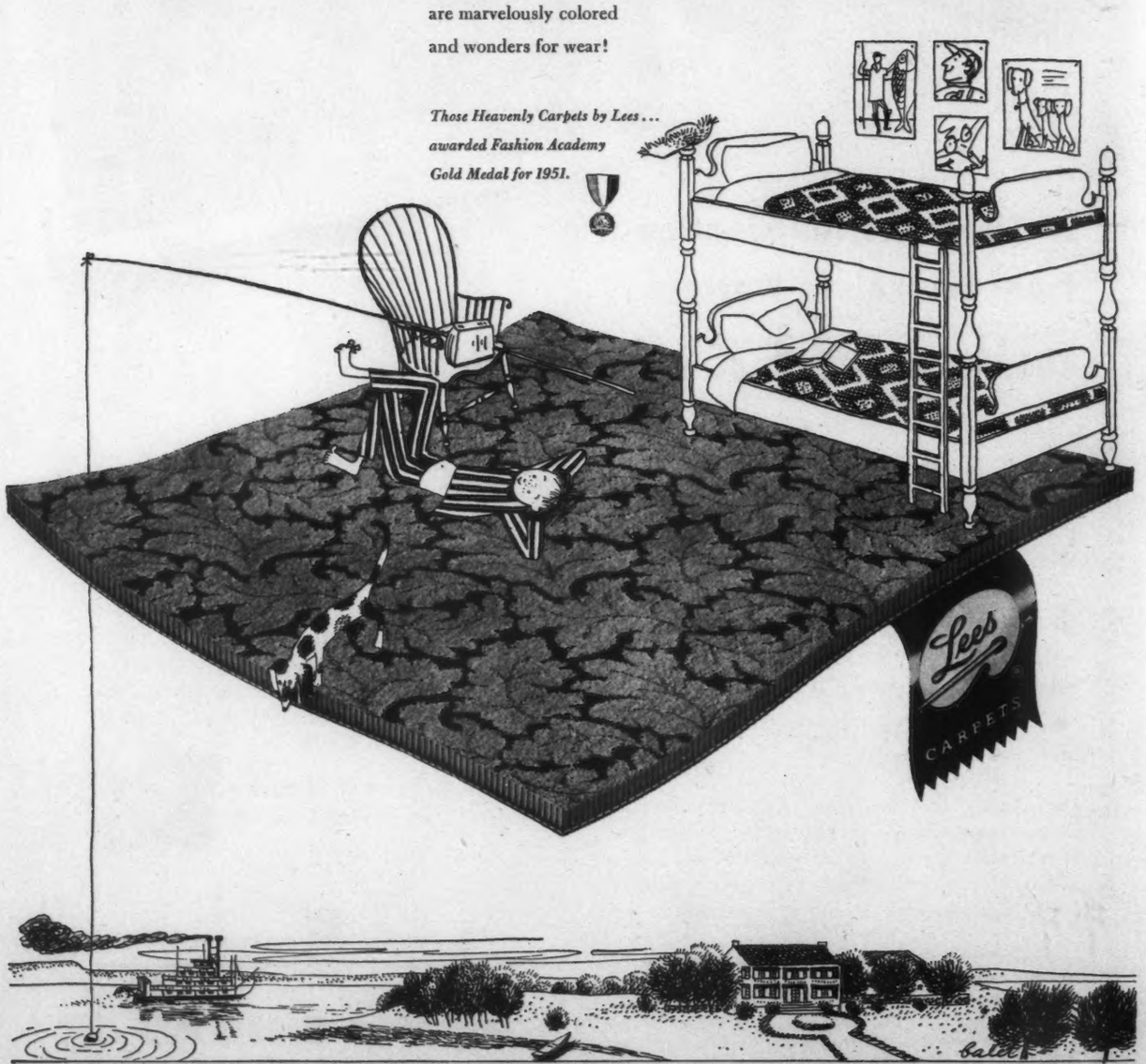
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Home is where you
hang your heart—
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Why not enjoy that luxury
with Lees lovely Interlude?
Its carved-effect texture
is pure imported wool.
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See other Lees Carpets made
from man-made miracle fibers.
They won't tolerate moths,
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Those Heavenly Carpets by Lees ...
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What about

Quality Approved

ALUMINUM WINDOWS?



Today, aluminum is one of our critical materials. It is important to our rapidly expanding defense program. That's why government regulations have limited its use.

As manufacturers, serving the building industry, we regret that world-wide conditions have made this necessary. We regret it not merely because it affects our own operations but because we know that aluminum windows have become an important part of your building plans and construction programs.

During the past five years, the use of aluminum windows for all types of buildings—institutional, commercial and residential—has expanded many, many times. Year after year, during this period, *more* architects have specified *more* aluminum windows for *more* jobs than during each preceding year. During this same period, the "Quality-Approved" Seal has become a recognized standard for the selection of aluminum windows at their finest.

As you plan new buildings for future construction, we suggest that you specify "Quality-Approved" aluminum windows and that you check with any of the manufacturers listed below regarding availability.

Aluminum Window Manufacturers Association

74 Trinity Place, New York 6, N. Y.

MEMBERS:

The Adams & Westlake Co., Elkhart, Ind. ★ Alcasco Products Co., Muskegon, Mich.
Aluminum Home Products Co., Knoxville, Tenn. ★ Alsco, Inc., Akron, Ohio
All-Lite Metal Window Co., Bristol, Pa. ★ The Wm. Bayley Co., Springfield, Ohio ★ Cupples Products Corp., St. Louis, Mo.
Michael Flynn Mfg. Co., Philadelphia, Pa. ★ General Bronze Corp. *(and its subsidiary The Aluminum Window Corp.)*, Garden City, N. Y.
Metal Arts Mfg. Co., Inc., Atlanta, Ga. ★ Reynolds Metals Co. *(Parts Division)*, Louisville, Ky. ★ J. S. Thorn Co., Philadelphia, Pa.
Sterling Windows, Inc., New York, N. Y. ★ Timm Industries, Inc., Los Angeles, Calif. ★ Union Aluminum Co., Inc., Sheffield, Ala.
Universal Window Co., Berkeley, Calif. ★ Ware Laboratories, Inc., Miami, Fla. ★ Windalume Corporation, West New York, N. J.

Everything but the in Joe Lenny's

Yet he was able to offer his houses—each equipped with General Electric Kitchen-Laundry—for only $9500



Joseph P. Lenny

Builder J. P. Lenny of Runnemede, N. J. had a strong conviction about *selling* houses.

He felt that it was most important to identify his "Cinderella" houses with QUALITY.

And, he felt that the best and surest way to identify his houses with *quality* was to install kitchen and laundry equipment that housewives know is the *finest* obtainable.

So he contracted to equip every one of his "Cinderella" homes with a General Electric Kitchen-Laundry, and was still able to offer it for only $9500 under "Packaged Mortgage" terms.

Result: He sold out the entire first section of 55 homes one week end!

In the pictures on these pages you see Mr. Lenny talking with Mrs. Marie Breen of 156 Patricia Lane, who purchased one of his "Cinderella" houses last year. Her enthusiastic comments are typical of those of her neighbors.

Home Bureau, General Electric Company, Bridgeport 2, Connecticut.



Mrs. Breen says: "We're so delighted with all our wonderful G-E appliances, and our friends are envious!

"I'm constantly amazed how many hours these G-E appliances save me, and it's still hard for me to believe that they cost so little under the terms of our mortgage . . . *less than five dollars a month extra!*"

glass slipper "Cinderella" home!



"It's wonderful to stack dirty dishes in my G-E Dishwasher after guests have left late at night—*and go right to bed!*" says Mrs. Breen. "In the morning they're sparkling-clean, ready for service again!"



"My G-E Clothes Washer saves me so much time, too. My rayon blouses and slips come out *damp*-dry . . . and I iron them immediately. I have two children and my G-E Clothes Washer is in service every day of the week!"



"How do I like my G-E Range? It's the finest range I ever owned. The temperature is so very even . . . and I never have a lopsided cake any more! Now my gravies, puddings and other baked foods come out just right. This G-E Range heats up so *fast*, too!"

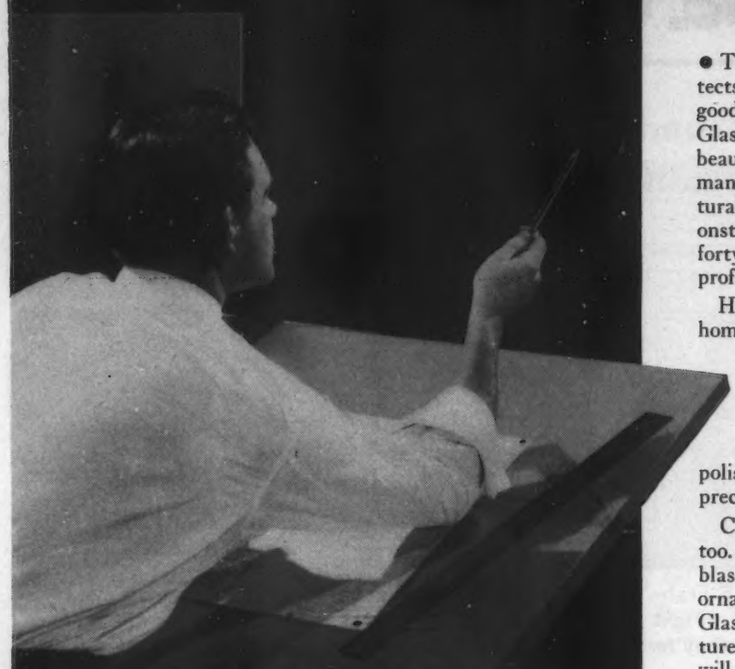


"I'm sure happy there's a General Electric Kitchen-Laundry in my home! So many of my friends who have become home owners recently, tell me they wish their new house had included all of this fine General Electric equipment."

You can put your confidence in—

GENERAL ELECTRIC

"I like to work with Carrara Glass"





• That is the consensus of leading architects from coast to coast. And there is good reason for this feeling. For Carrara Glass — in architectural adaptability, beauty, permanence and quality of manufacture — is unique among structural materials. Carrara Glass has demonstrated its superiority in its more than forty years' service to the architectural profession.

Here is a finely-machined product—homogeneous, flat and reflective of surface, flawless. Joints are true and even. There is no lippage. It is free from warpage. Whatever the color or thickness, it is mechanically ground and polished. It is a *true* glass, the result of precision fabrication methods.

Carrara Glass is very easily handled, too. And it can be decorated by sandblasting, fluting, shading, or painting for ornamental purposes. Moreover, Carrara Glass is impervious to weather, moisture, chemicals, grease, pencil marks. It will not check, craze, fade or stain. Keeping it clean and sparkling always is simplicity itself. Wipings with just a damp cloth keep it new-looking, *indefinitely*. There are ten attractive colors available, offering a large variety of decorative combinations and effects.

Give serious consideration to Carrara Glass in all your plans. You will find it worthwhile. And your clients will be pleased. Pittsburgh Plate Glass Company, 2143-1 Grant Building, Pittsburgh 19, Pennsylvania.

Architect: Anker F. Hansen, Memphis, Tenn.

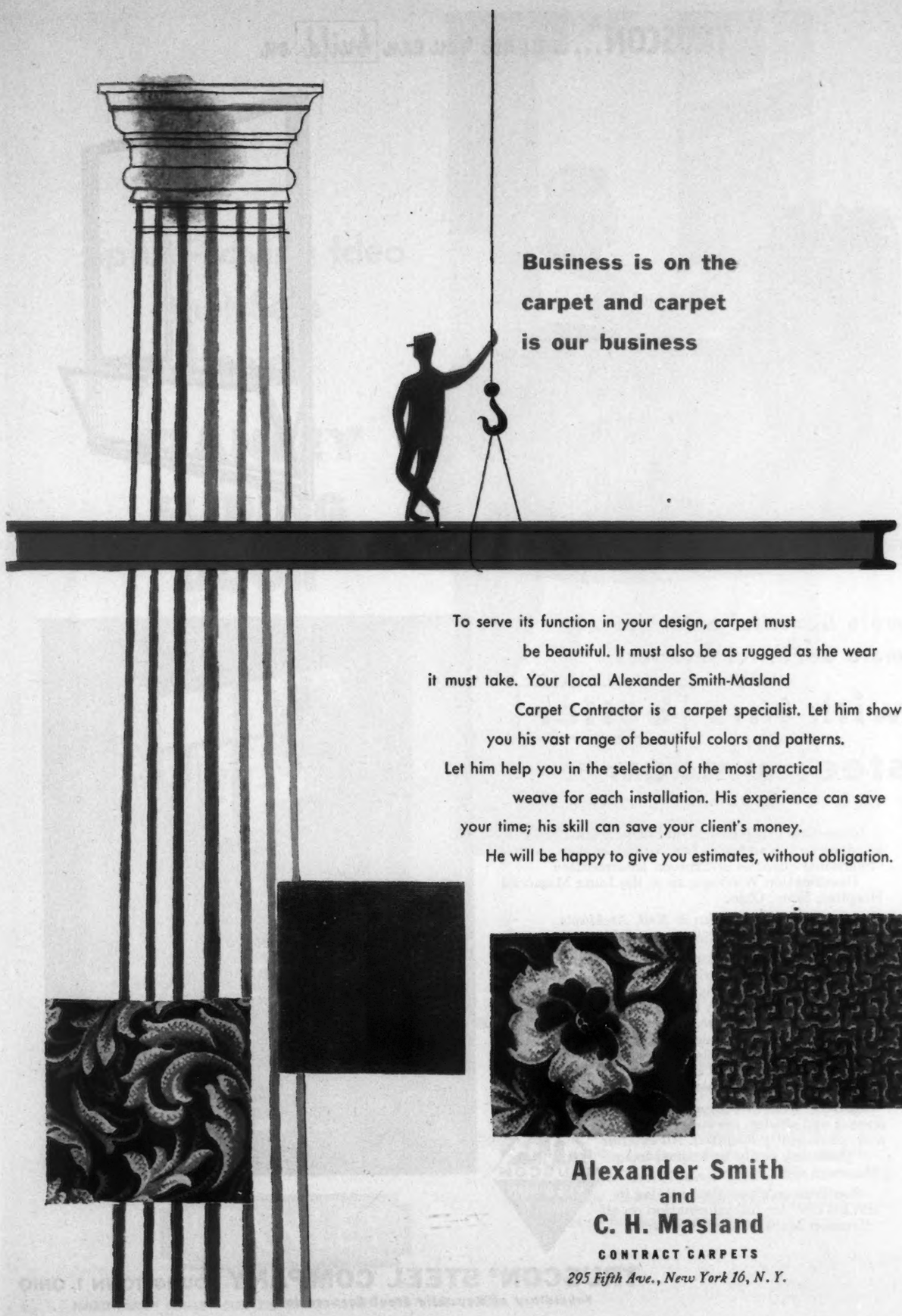
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PITTSBURGH PLATE GLASS COMPANY



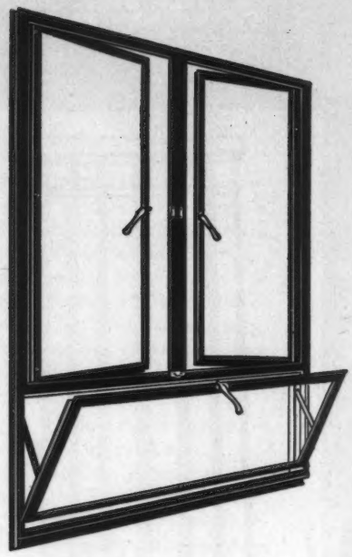
Business is on the carpet and carpet is our business

To serve its function in your design, carpet must be beautiful. It must also be as rugged as the wear it must take. Your local Alexander Smith-Masland Carpet Contractor is a carpet specialist. Let him show you his vast range of beautiful colors and patterns. Let him help you in the selection of the most practical weave for each installation. His experience can save your time; his skill can save your client's money. He will be happy to give you estimates, without obligation.

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CONTRACT CARPETS
295 Fifth Ave., New York 16, N. Y.

TRUSCON... a name you can build on





more beautiful exteriors
more beautiful interiors

with this better steel window



Interesting architectural and decorating effects are open to the architect and builder in the handsome qualities of Truscon Intermediate Combination Windows, as in the Lima Memorial Hospital, Lima, Ohio.

Credit: McLaughlin & Keil, Architects
Chas. H. Shook, Inc., Contractor

The open-in sill-vent affords unusual flexibility of ventilation control during cold or inclement weather. Incoming air is deflected upward to mix with the warmer air in the upper portion of the room. In warmer weather, when maximum ventilation is a much desired luxury, the casement vents may also be opened, admitting ventilation to the full height and width of the opening.

Collateral window equipment, including screens and shades, are simply installed and conveniently operated. All exterior glass may easily be washed from the room side.

See Truscon's complete catalog in "SWEET'S" for full information on all Truscon *Mark of Merit* Products.

TRUSCON
MARK OF MERIT PRODUCTS

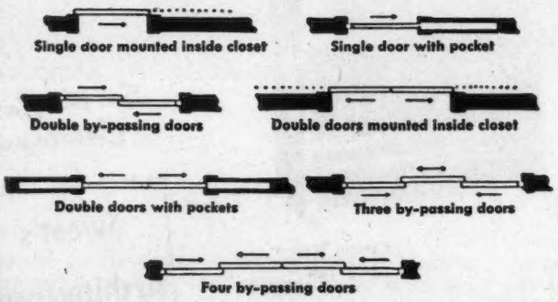
TRUSCON® STEEL COMPANY YOUNGSTOWN 1, OHIO
Subsidiary of Republic Steel Corporation

Space-Saving Idea that Sells Homes

STANLEY SLIDING DOOR HARDWARE



A type of Stanley Hardware for all these installations — and more



You can give clients what they want *most* — living space — with Stanley Sliding Door Hardware. Women, particularly, are intrigued with interior doors that slide in and out of walls. Silent-acting and smart-looking, as well as space-saving, they make your selling job easier.

Investigate this modern, low-cost way to build SELL into today's smaller homes. Your hardware consultant, lumber or building material dealer will be glad to tell you more about Stanley Interior Sliding Door Hardware. The Stanley Works, New Britain, Connecticut.

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Specify CURTIS AIR CONDITIONING with CONFIDENCE

Here's Why ...

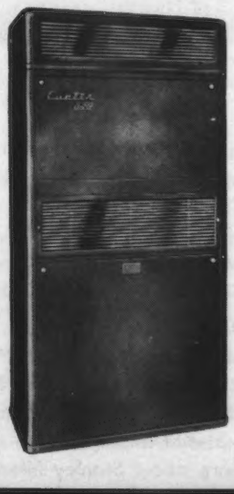


Water Cooled Condensing Units —through 40 Tons

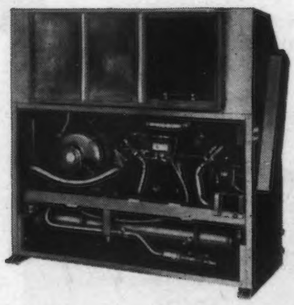
- Many years of outstanding performance records have given Curtis units an earned reputation for trouble-free operation.
- There are 97 years of successful engineering and manufacturing experience "built in" all Curtis equipment.
- Curtis packaged units are completely assembled, eliminating expensive on-the-job labor.
- No expense has been spared in building Curtis units . . . yet they're competitively priced.
- Curtis units will handle any air conditioning or refrigeration requirement.
- A new 1951 Curtis Architects Manual will be sent upon request to licensed architects. Use your own letterhead, please.



Evaporative condensers to match—cooling towers— and air handling units



2, 4, 6, 8 Ton— Packaged Types



Central Type— 10-15 Ton

See the Curtis Catalog in

Sweet's Architectural File

97 Years of Successful Manufacturing

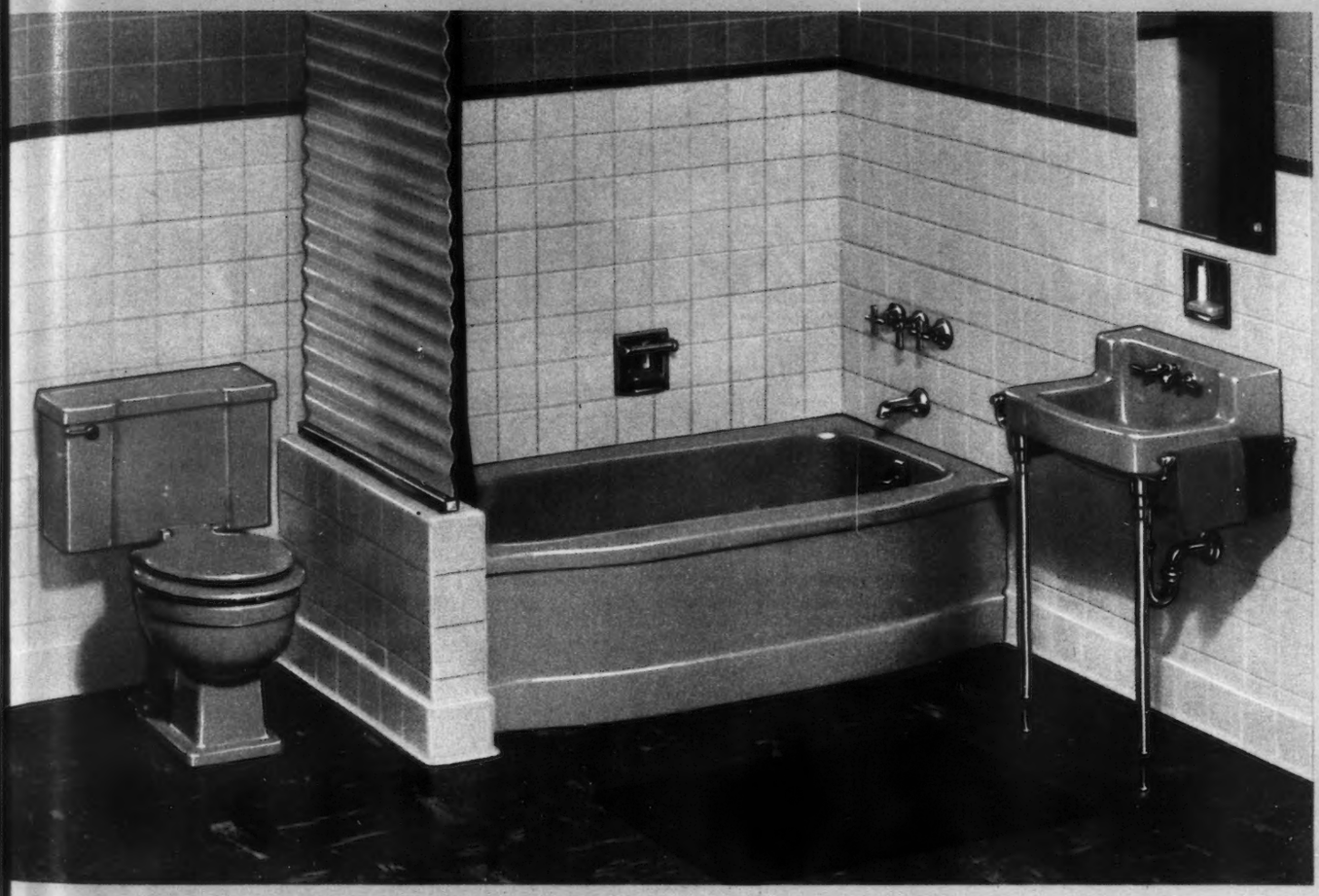
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Curtis

Curtis Refrigerating Machine Division
of Curtis Manufacturing Company
1986 Kienlen Avenue, St. Louis 20, Missouri

There's a Reason for the Growing Popularity of BRIGGS *Beautyware*

IN COLOR



More Builders . . . More Plumbers . . . More Home Owners Prefer Briggs Fixtures than Ever Before!

1950 was the greatest year in Briggs' history. Despite stepped-up production it was impossible to meet the unprecedented demand.

Year after year, the popularity of Briggs Beautyware has been steadily growing with builders, plumbers and home owners everywhere. There are, of course, good reasons for this acceptance. For example, Briggs fixtures are sturdily built for long-lasting dependability, yet all unnecessary dead weight has been eliminated to simplify installation.

They are available in four beautiful pastel colors costing only 10% more than white, when purchased in complete sets. They offer many saleable features such as the safety bottom bathtub, large capacity lavatory and quiet flush closet—all stain-proof and acid-resisting.

For the second time in as many years, Briggs Beautyware was honored by the American Society of Industrial Engineers with the Merit Award. This award is granted for leadership in research, engineering, design and manufacture.

As the only manufacturer in this field to be so honored, the award is a testimonial to the quality of Briggs products and the achievement of the Briggs organization. Of this we are proud.

BRIGGS MANUFACTURING COMPANY • 3001 MILLER AVENUE • DETROIT 11, MICHIGAN



A305 *IMPROVED* REINFORCING BARS

For years it has been customary to designate the size of reinforcing bars by their diameter—¼", ⅜", etc. Square bars were designated by the width of one side.

Now, with the improved A305 bars, numbers from 2 to 11 are used to designate bar sizes. These numbers denote the nominal diameter of the bar in eighths of an inch. However, as the new bars have the same cross-sectional area as the old bars, design tables do not need to be changed. The #3 bar, for example (nominal diameter ⅜") has the same weight per foot as a ⅜" plain round bar. Bars #9, #10, and #11 are round bars equivalent in weight and nominal cross-sectional area to the former 1", 1⅛", and 1¼" square bars.

The accompanying bar chart explains these new designations.

CONCRETE REINFORCING STEEL INSTITUTE

38 SOUTH DEARBORN STREET, CHICAGO 3, ILLINOIS

STANDARD A305 REINFORCING BARS

BAR SIZES		WEIGHT	NOMINAL DIMENSIONS — ROUND SECTIONS		
OLD (INCHES)	NEW (NUMBERS)	POUNDS PER FOOT	DIAMETER INCHES	CROSS SECTIONAL AREA - SQ. INCHES	PERIMETER INCHES
¼	2	.167	.250	.05	.786
⅜	3	.376	.375	.11	1.178
½	4	.668	.500	.20	1.571
⅝	5	1.043	.625	.31	1.963
¾	6	1.502	.750	.44	2.356
⅞	7	2.044	.875	.60	2.749
1	8	2.670	1.000	.79	3.142
1	9	3.400	1.128	1.00	3.544
1⅛	10	4.303	1.270	1.27	3.990
1¼	11	5.313	1.410	1.56	4.430

The new bar numbers are based on the number of 1/8 inches included in the nominal diameter of the bar.

Bar number 2 in plain rounds only. Bars numbered 9, 10 and 11 are round bars and equivalent in weight and nominal cross-sectional area to the old type 1", 1-1/8" and 1-1/4" square bars.

The above weights are adopted as standards by the Institute in 1934 and supersede former practice.

These weights have been approved through the U.S. Department of Commerce Simplified Practice Recommendation R 26-50.

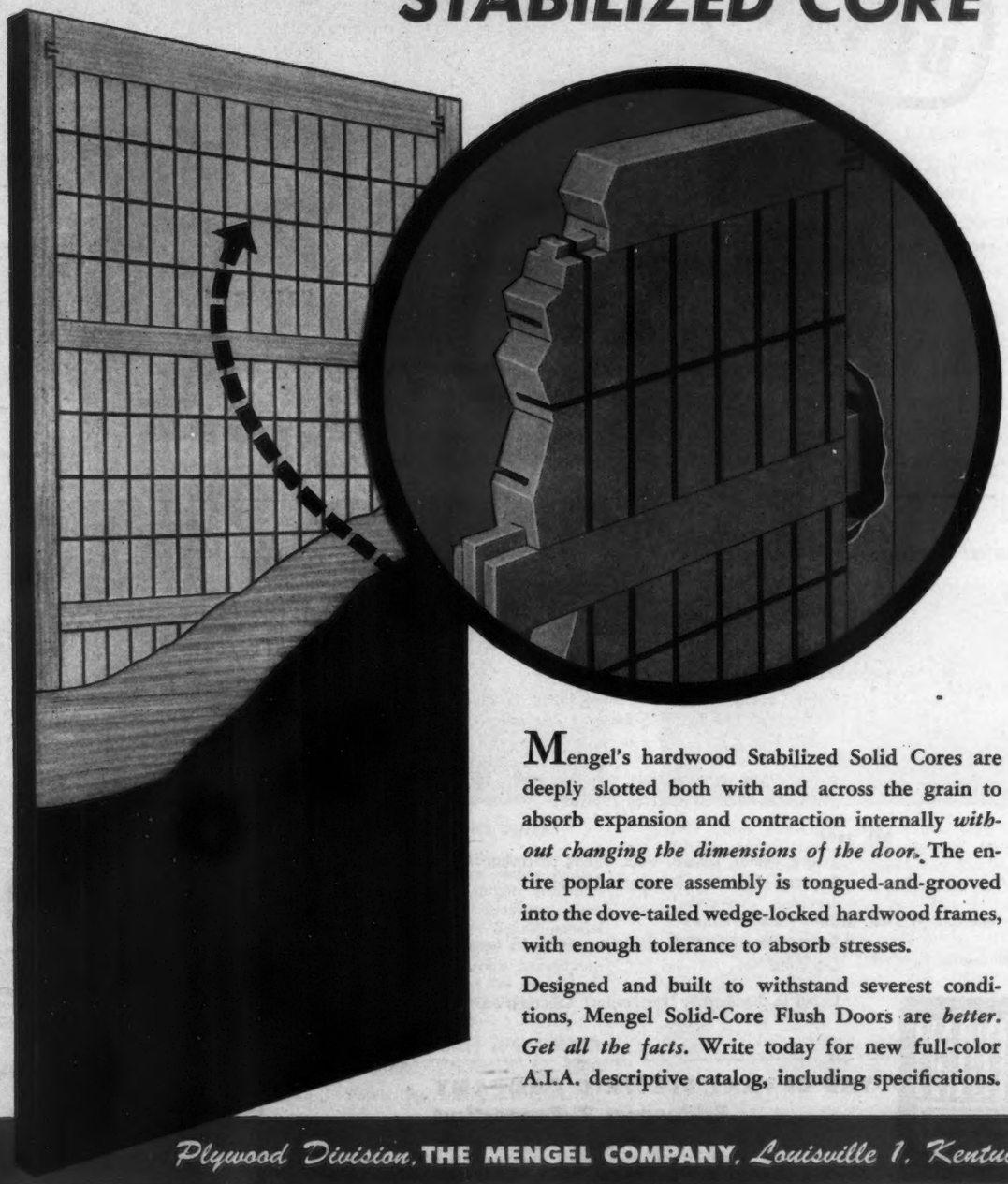
Write for your FREE Copy of this New Bar Card

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MENGEL

SOLID-CORE *Flush* DOORS

have this exclusive STABILIZED CORE



Mengel's hardwood Stabilized Solid Cores are deeply slotted both with and across the grain to absorb expansion and contraction internally *without changing the dimensions of the door.* The entire poplar core assembly is tongued-and-grooved into the dove-tailed wedge-locked hardwood frames, with enough tolerance to absorb stresses.

Designed and built to withstand severest conditions, Mengel Solid-Core Flush Doors are *better. Get all the facts.* Write today for new full-color A.I.A. descriptive catalog, including specifications.

Plywood Division, **THE MENGEL COMPANY,** *Louisville 1, Kentucky*

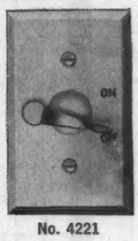


WEATHERPROOF DEVICES

SWITCHES

Bryant "T" Rated Tumbler Switches are complete with weatherproof mats and plates finished to resist corrosion.

NO. 4421 SERIES
available in single pole, double pole, 3-way and 4-way—10 Amperes 125 Volts, 5 Amperes 250 Volts.



No. 4221

CONVENIENCE OUTLETS

These Bryant Weatherproof Convenience Outlets are equipped with weatherproof mats and thread-on or clamp-on covers. Plates are finished to resist corrosion.

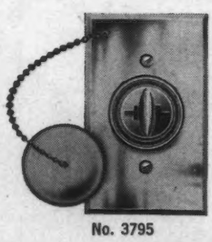
NO. 3795
2-wire, single, double "T" slots, thread-on cover—15 Amperes 125 Volts, 10 Amperes 250 Volts

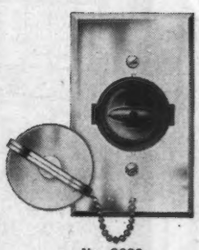
NO. 3880
2-wire, single, parallel slots, clamp-on cover—15 Amperes 125 Volts, 10 Amperes 250 Volts

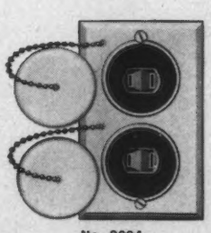
NO. 3894
2-wire, duplex, parallel slots, thread-on covers — 15 Amperes 125 Volts, 10 Amperes 250 Volts

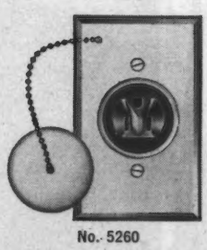
NO. 5260
3-wire, grounding type, thread-on cover—15 Amperes 125 Volts

Listed as Standard by Underwriters' Laboratories, Inc.


No. 3795


No. 3880


No. 3894


No. 5260

BRYANT
SUPERIOR WIRING DEVICES

THE BRYANT ELECTRIC COMPANY
Bridgeport 2, Connecticut
CHICAGO • LOS ANGELES

SPECIFY BRYANT DEVICES FROM YOUR ELECTRICAL WHOLESALER

J-99849

Look what they've done at Dobbs Ferry, N. Y.
TO INSPIRE NEW DESIGN IDEAS!



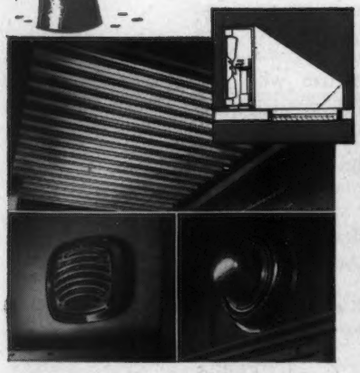
Julius Gregory, *Architect*
Robert Chuckrow, *Builder*

IT'S THE '51 PACESETTER HOUSE

featuring PACESETTING CAREY Products!



Here's Magic in Asbestos-Cement! It's Careystone Corrugated asbestos-cement highlighting the charm and beauty of the *PACESETTER House*! A natural for interior and exterior walls, partitions, fences, planting boxes, garden sheds. Takes paint readily. Resists rot, decay, vermin, weather, fire!



The Winning Fan Combination for Year 'Round Comfort!

A Miami-Carey kitchen ventilator—whisks away odors, smoke, greasy fumes. Keeps greasy deposits off walls, floors, furniture! In the attic—A Miami-Carey attic fan to draw out sun-scorched air; fill every room with cool, fresh night air. There's a whisper-quiet, economical, long-lived Miami-Carey fan for every ventilating and installation need.



Builders and Architects Agree!

Convenience sells! What is *more* convenient than glamorous, roomy Miami-Carey recessed towel cabinets, with full-length crystal mirror, sparkling glass shelves, and snow-white baked enamel on all-steel interior? Miami-Carey makes a complete line of bathroom beautifying cabinets and accessories for every budget and installation need!

Architect Julius Gregory and the editors of House Beautiful selected many Carey products for the *PACESETTER House* . . . to help bring into reality their new ideas for contemporary design and construction!

Here before you are a few examples to show how well Carey products fit the *PACESETTER* pattern . . . create an atmosphere of luxurious beauty and comfort, with maximum convenience and safety.

Whether you specialize in design, new construction or remodeling, you will find the complete Carey line of client-satisfying products a ready source of inspiration . . . to bring your ideas into practical reality!

FIRE-CHEX SHINGLES
for Pacesetting Beauty, Protection!



Only Carey Fire-Chex come in rich solid colors, or striking shadow-blends that create roof designs copyrighted as "works of art!" Add husky 325 lb. construction for top resistance to wear and weather—plus Underwriters' Laboratories, Inc. Class A* rating for fire-safety (only Fire-Chex have it) and you've got the Pacesetting shingle of the century!

*Without asbestos underlayment

SEE SWEETS BUILDERS FILE FOR COMPLETE IDEA-INSPIRING INFORMATION ABOUT THE COMPLETE LINE OF CAREY PRODUCTS FOR BUILDING AND REMODELING—OR ASK YOUR CAREY DEALER.

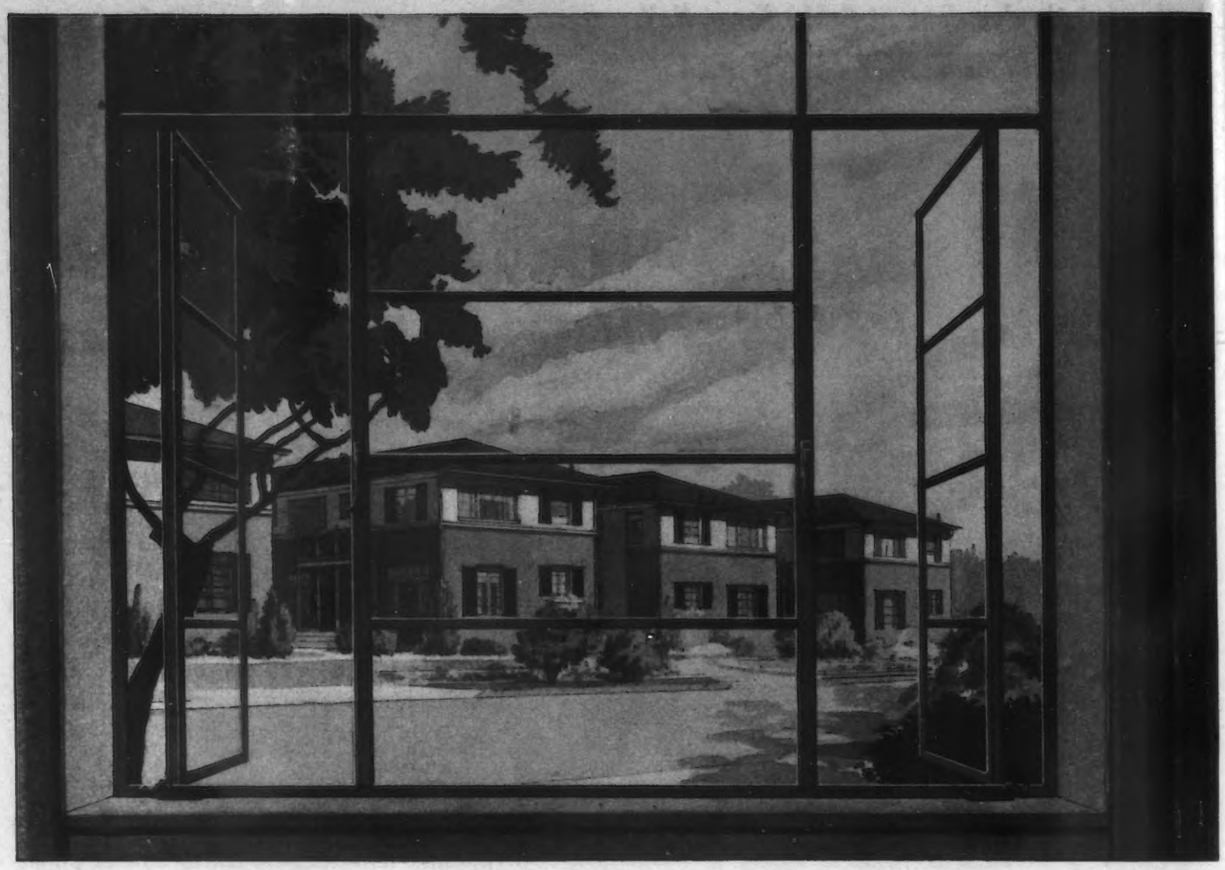
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Bathroom Cabinets and Accessories • Ventilating Fans • Ceramo Siding • Corrugated Asbestos-Cement • Fire-Chex Asbestos Plastic Shingles • "Fire-Guard" and Rock Wool Insulation • Other Famous Products for Home, Farm and Industry



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The high durability and low maintenance cost of Lupton Metal Windows mean more today than ever before. Lupton Windows are built to last. Sturdy metal frames are precision-built at every point — cannot warp, swell or shrink.

Slim-frame Lupton Metal Windows harmonize with contemporary or traditional design. Provide abundant daylighting, controlled draftless ventilation. Lupton Casements have extended hinges to permit cleaning both sides of glass from inside the room.

See the complete Lupton line for residential, institutional, commercial, and industrial work in Sweet's Architectural File. Or write for 1951 Catalog.

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Member of the Metal Window Institute and Aluminum Window Manufacturers Association

LUPTON METAL WINDOWS

little cube

that grew

and grew

and grew

Measure a full scale model of this little cube and your answer will be a mere four inches.

Measure it for its impact and you'll see that it's one of the biggest ideas ever to hit the building industry. An idea that has grown fast, is growing, will continue to grow.

We're talking about the modular system of construction, of course. It's one of our favorite subjects, because we believe in it—have believed in it and supported it *from the very first.*

That's why the members of the Facing Tile Institute, the "12 good names," are especially good to know when it comes to modular. They enable you to combine "Structural Clay Facing Tile at its best" with the many advantages of modular—faster construction, less material waste, lower labor costs.

In helping this little cube to grow, the Institute has merely followed out its original purpose: to lead the industry in giving you fine quality, easy-to-use products.

Our catalog 51-C gives detailed information about these products—our policy of inspection and guarantee, research, standardization of shapes and sizes, and our wide range of colors in glazed and unglazed finish. For your free copy of this book, just write the Institute, Desk AR-5.

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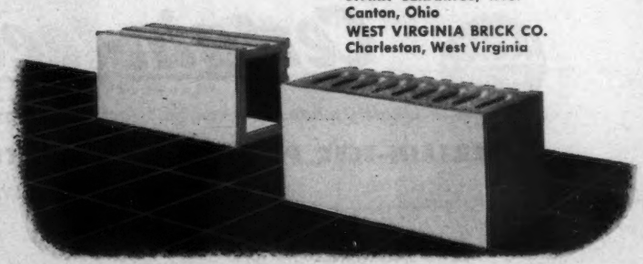
METROPOLITAN BRICK, INC.
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4. **Fireproof Bestwall Gypsum Wallboard.** Wood-grained wallboards reproducing knotty pine, ribbon mahogany, and figured aspen.

5. **Incombustible Fiberglas* Insulation for Walls and Ceilings.** Batts, blankets and pouring wool complying with Federal Specification HH1-521. Famed moisture-resistant Fiberglas will outlast the life of the house.

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CERTAIN-TEED PRODUCTS CORPORATION

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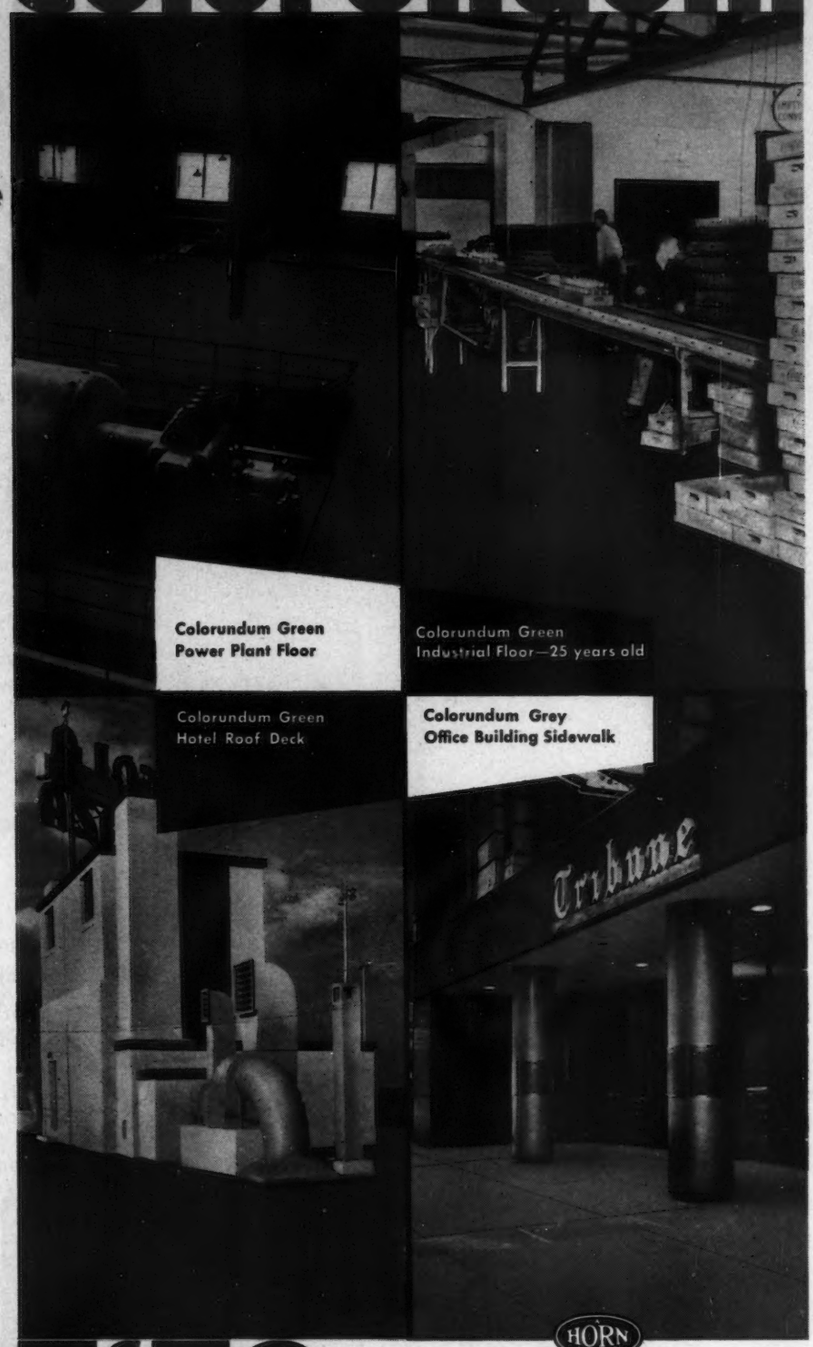
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trowelled into the fresh cement finish

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Bryant Model 324 Forced-Air Furnace, with *Hevigage* 12-gauge steel heat exchanger. For all gases. A.G.A. inputs: 65, 85, 100 and 125 thousand Btu per hour.

A truly great space saver like the Bryant *Hide-away* Gas Forced-Air Furnace adds real value and *appeal* to a house. It can be tucked away in the attic or suspended from ceiling or under the floor, releasing for storage, utility or *living* all the valuable space usually occupied by conventional heating equipment!

The *Hide-away* offers typical Bryant dependability and gas economy, with positive automatic control. Casing temperatures are *low*. Installation-wise, you get ease of handling, and structural steel mounting channels provided can also be used to suspend the unit when it is so installed.

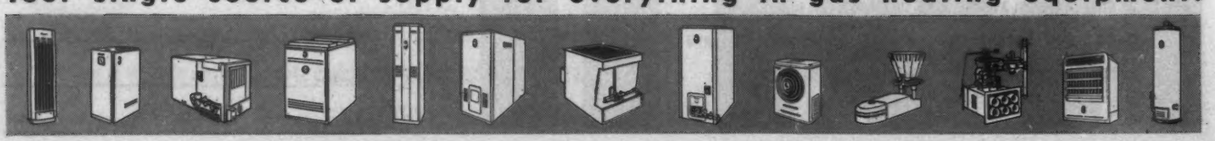
Plan more *living* space and better *heating* for your homes at the same time. Plan to use the Bryant *Hide-away* Forced-Air Furnace! For complete details, contact the Bryant Distributor nearest you or write direct. Bryant Heater Division, Dept. 92, Affiliated Gas Equipment, Inc., 17825 St. Clair Avenue, Cleveland 10, Ohio.

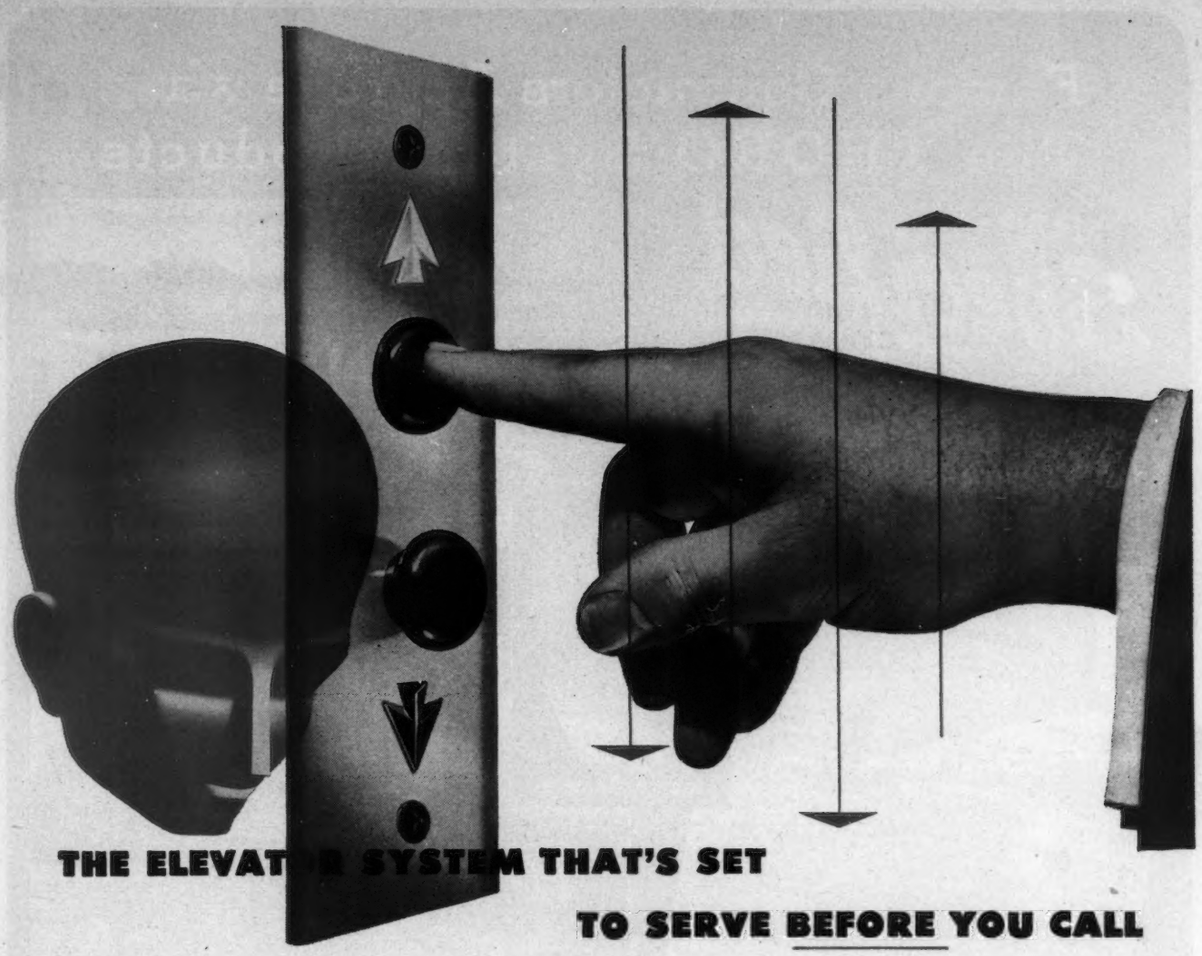
Let the pup be furnace man ... and water boy, too!

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Your *single source* of supply for everything in gas heating equipment!





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Maybe this happens to you! Press an elevator button. Wait for a car . . . and wait and wait and wait. It happens to millions every day . . . except in buildings served by Westinghouse Selectomatic Elevators.

For even before you think about taking an elevator, Selectomatic is ready to serve you. To make sure your call is answered in seconds flat, Selectomatic's ingenious "electrical brain" is always on the alert . . . always anticipates the traffic demand . . . automatically matches cars to calls to floors.

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So, if your job is purchasing elevators, *test ride Selectomatic before you decide.* For information on local Selectomatic installations you can "test ride," write the Westinghouse Electric Corp., Elevator Division, Dept. D-1, Jersey City, N. J.

For years, Westinghouse engineering developments have stimulated the vertical transportation industry to strive for ever-higher standards of quality and efficiency. In every phase of vertical transportation—equipment, maintenance, and service—Westinghouse has been the vanguard for progress. So, whatever your traffic problems may be—there's a Westinghouse Integrated Vertical Transportation System to solve them completely. Look ahead with the leader . . .

YOU CAN BE SURE... IF IT'S **Westinghouse**

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Famous Contractors Approve when The THORO System Products are— *Specified*

Here's what John F. Templin, outstanding General Contractor, Lakeland, Florida, has to say . . .



Showing 1 of 18 buildings constructed for Lakeland's Florida Southern College. All with Thoroseal on exterior surfaces. John F. Templin, General Contractor.



John F. Templin

TEMPLIN'S, INC.
General Contractors
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LAKELAND, FLORIDA

Mr. Bert J. Long,
Standard Dry Wall Products,
New Eagle, Penna.

November 16, 1950

Dear Mr. Long:

Prior to 1944 we tried numerous kinds of materials for waterproofing masonry construction. Since we began using Thoroseal and Quickseal six years ago we have been entirely satisfied. Not only have all of our applications been highly satisfactory, but their use is economical.

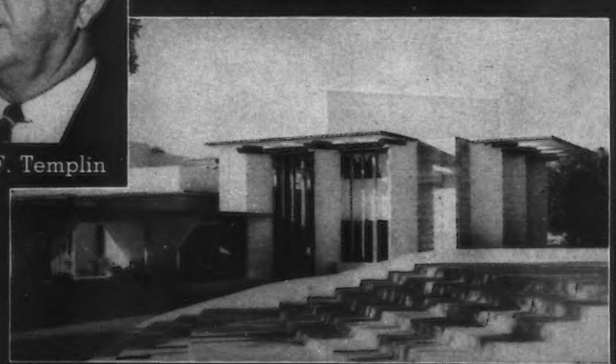
Your distributor for central Florida, Mr. Thomas N. Morrison, Lakeland, has proven himself to be as reliable in representing your merchandise as are the products themselves.

On the basis of our experience with Thoroseal and Quickseal we gladly recommend them for waterproofing and for beautification.

Sincerely Yours,

TEMPLIN'S INC.,
By John F. Templin

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"Weathering the elements of Florida has been a continuous battle for years for most contractors in a climate of heavy rains, boiling sun and hurricane winds. That's why you'll find leading builders recommending the famous Thoro System Products. For over 39 years, these materials have been given a rugged test that shows them tops on most home builder's programs."

"The range of colors and the lasting brilliance of Thoroseal and Quickseal makes them a number one sales feature for the contractor who emphasizes quality at minimum cost."

39 YEARS OF SOUND BUSINESS REPUTATION

EXPERIENCE, in the preparation of materials for masonry protection and maintenance,— in every case means, success or failure!

With THORO System Products, the designer secures 100% protection by complete sealing of the surface, combined with exceptional beauty and color.

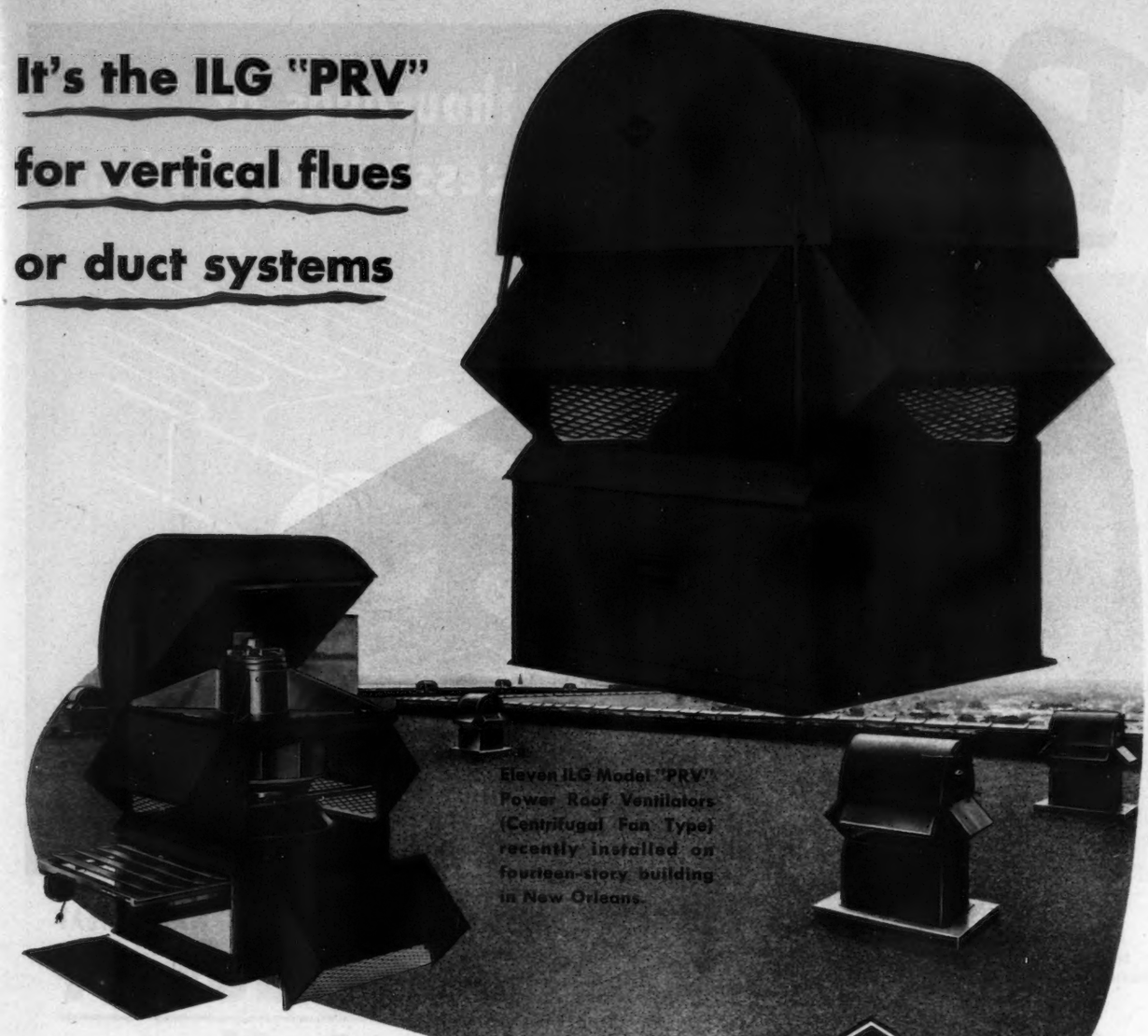


Write today for our new 20 page brochure 17-A and designer's wall chart.

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NEW EAGLE PENNSYLVANIA

It's the ILG "PRV" for vertical flues or duct systems



Eleven ILG Model "PRV" Power Roof Ventilators (Centrifugal Fan Type) recently installed on fourteen-story building in New Orleans.

New, improved power roof ventilator

• If you haven't given consideration as yet to this new ILG Model "PRV" Power Roof Ventilator for tough ventilating applications, you are missing the biggest development in years! Architects and engineers have given the unit a rousing welcome . . . they tell us it has every desirable feature for positive, controlled ventilation, independent of wind and weather conditions. They like the design—a complete ventilating unit consisting of a self-cooled motor direct-connected to a non-overloading, backward curved wheel, plus a selection of air control accessories in a single, weathertight housing. They approve its rugged construction, its precision manufacture. They find the sizes are right to give exceptional air deliveries over a wide range of pressures (free air to 1½" SP). And they bank on ILG's "One-Name-Plate" Guarantee. To get the complete story, call nearby Branch Office (consult classified directory) or send coupon today.

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Free! New engineering data bulletin No. 1901 gives you the complete story—features, sizes, capacities, dimensions. Send coupon now!

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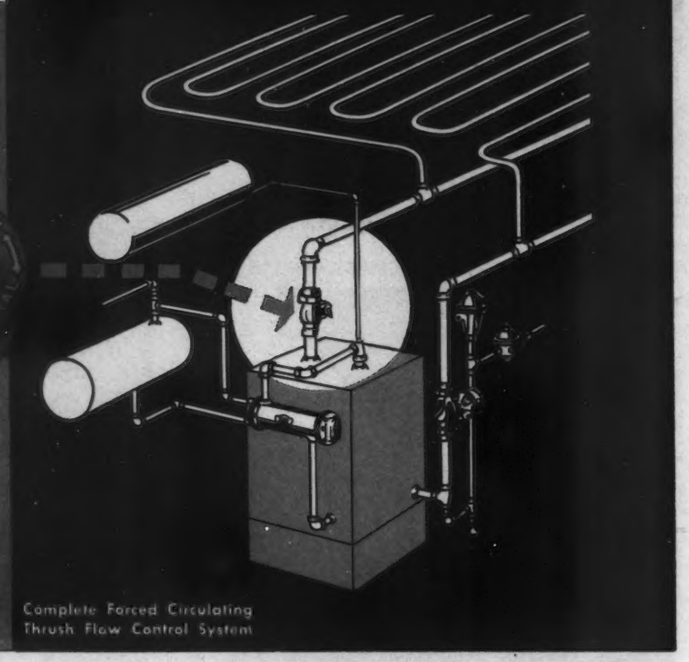
*Individual*_____ *Title*_____

*Address*_____ *Zone*_____

*City*_____ *State*_____

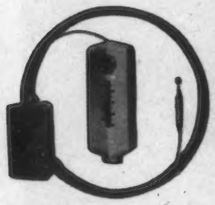
Proved in thousands of successful installations





Complete Forced Circulating Thrush Flow Control System

No. 201 Thrush Radiant Heat Control



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Horizontal Thrush Water Circulator

FORCED CIRCULATING FLOW CONTROL HOT WATER HEAT

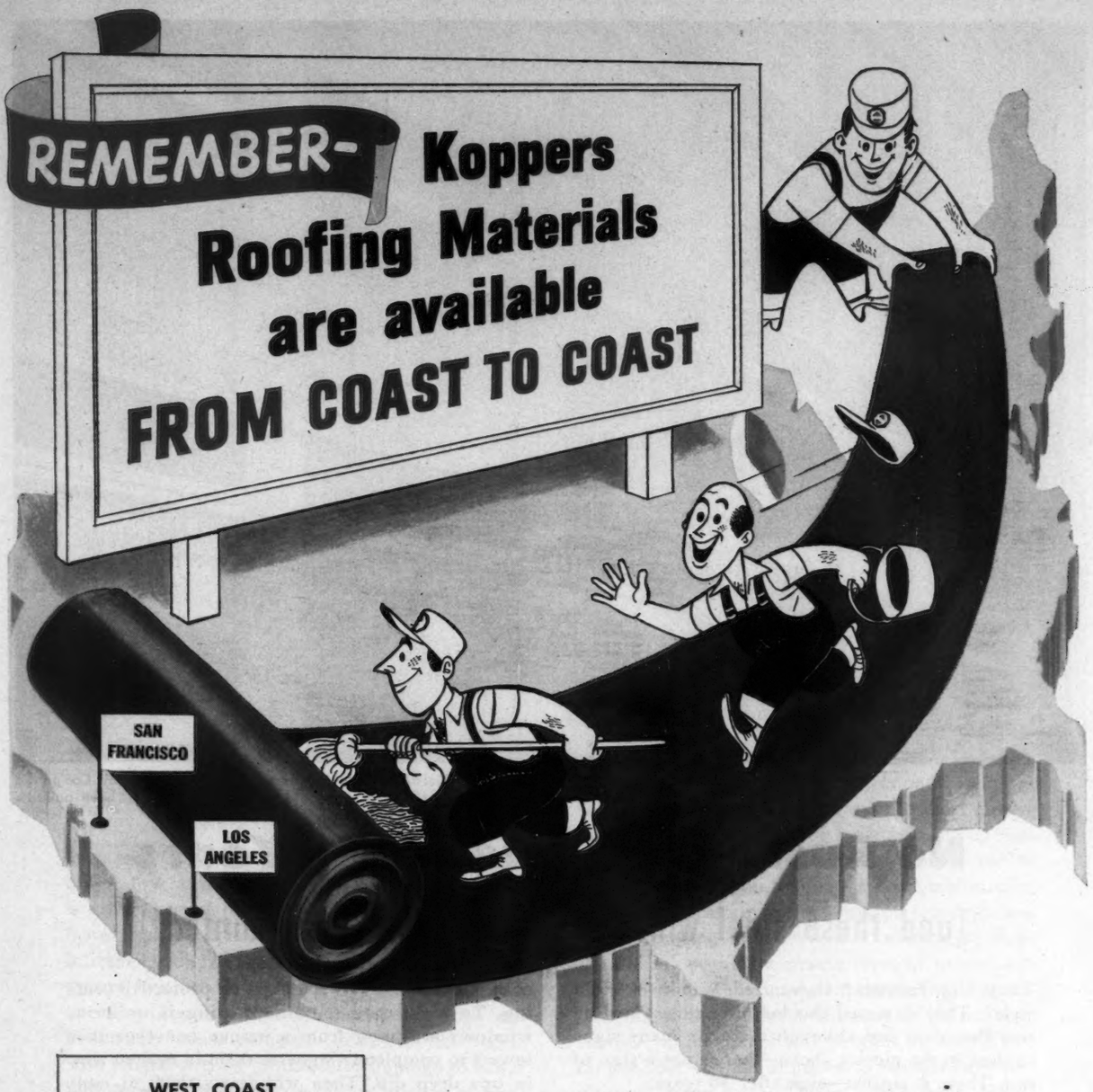
Keeps air out of Radiant Coils...

RADIATORS, BASEBOARD AND CONVECTORS

KEEP HOT water heating systems operating at the peak of efficiency by eliminating air at its source. The improved Thrush Flow Control Valve vents air from the boiler. It is really two valves for the price of one because it provides both flow control and air elimination without any extra air tube fitting. Made in the vertical type shown here and also in the angle type to facilitate ease of installation under varying conditions. No other flow control valve has all these features. If you want to give your customers the best in modern radiant hot water heat, specify Thrush Forced Circulating Flow Control System with these valves.

See our illustrated catalog in Sweet's or write Dept. J-5.

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HERE'S a reminder for architects, engineers and roofing contractors: Koppers Roofing Materials are available as far west as San Francisco and Los Angeles.

Roofs built-up with these famous materials — Koppers Coal Tar Pitch and Approved Tarred Felt—resist prolonged contact with water *without deteriorating*. They are self-sealing if small breaks occur.

Koppers will bond roofs for 10, 15 or 20 years and, as proved by many case histories, it is common for these roofs to far outlive the tenure of the bond.

Specify Koppers Roofing Materials, and your projects will have the best in built-up roofing. For specifications, see our listing in Sweet's Catalog. Get in touch with us for any additional information you may require.

KOPPERS COMPANY, INC., Pittsburgh 19, Pa.

• SPECIFY KOPPERS FOR LONG-LIFE ROOFING •



30-year-old Fenestra Galvanized Steel Windows in American Woolen Company's Mill No. 2, Shawsheen, Mass. No sign of rust—yet they've never been painted.

No Rust—Even After 30 Years

(and these steel windows have never been painted!)

These are Fenestra* Galvanized Windows—"old style". They've served this building since Harding was President and although there are many signs of time in the picture above—there's not a sign of *rust.* There *is* no rust—even after 30 years.

And these windows were never painted.

But here's the really *big* news! *Now* Fenestra Engineers have developed a hot-dip galvanizing system that does *an even better* job—and they've built a special new plant around it, the only plant of its kind in the country. It has special tanks, special automatic controls—everything especially designed to give you the most *permanent* windows made.

Galvanizing is done *after* assembly of window frames and assembly of ventilators (and after cleaning, rinsing, fluxing and drying)—so that every bit of exposed metal gets a locked-on protective coating. To make sure the zinc coating is uniform, windows are hung from a unique conveyor that lowers to completely immerse them in molten zinc in one deep dip. Then withdraws them at controlled speed. Then they dip into the Bonderizing tank. Bonderizing gives them an attractive appearance and prepares the surface if you wish to paint them for decorative purposes.

Check on these windows today. *Steel-strong windows made to STAY new* put real meaning in the term "maintenance free"!

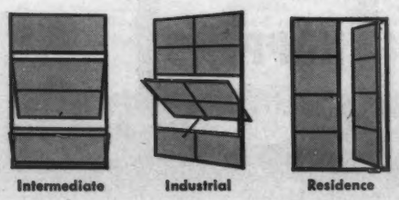
Call your Fenestra Representative (he's listed in the yellow pages of your phone book) or write to Detroit Steel Products Company, Dept. AR-5, 2252 East Grand Boulevard, Detroit 11, Michigan.

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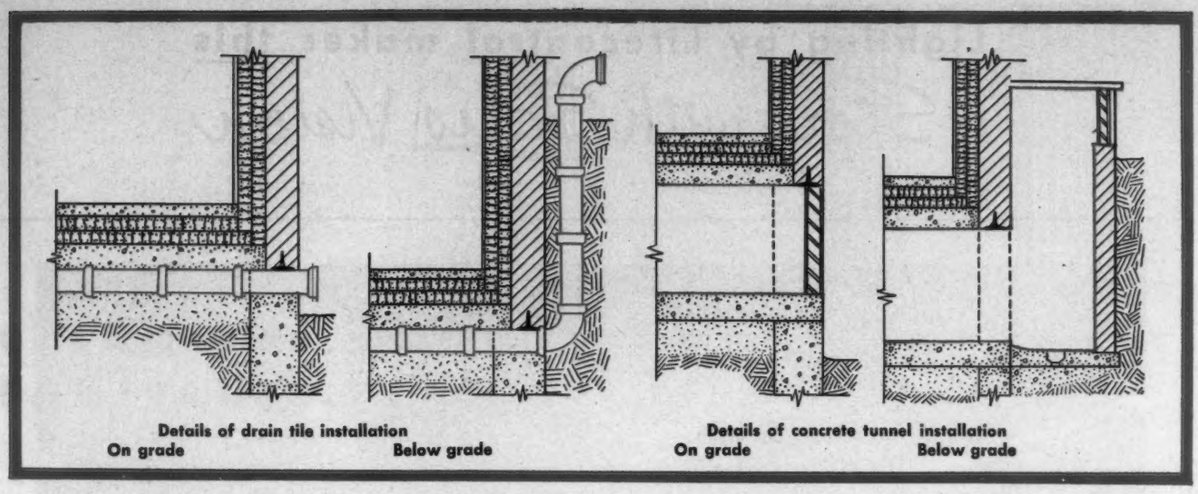
Steel-Strong Windows made to STAY new

Fenestra

HOT-DIP GALVANIZED STEEL WINDOWS



Intermediate Industrial Residence



Details of drain tile installation
On grade Below grade

Details of concrete tunnel installation
On grade Below grade

We have been asked . . .

"Is there danger of frost forming in the ground under a large, on-grade freezer?"

"I plan to build an additional hardening room on grade," writes an ice cream manufacturer. "Dimensions are to be 60′ x 80′. Will the 20° to 30° F. below zero temperatures of my room freeze the ground below it?"

HERE'S THE ANSWER:

It is quite common for frost to form under a large, on-grade freezer. What happens is that the heat is drawn out of the earth and through the floor faster than it can be replaced by outside heat flow into the ground at the edges of the building. The ground beneath the subfloor freezes and expands, exerting pressures that will buckle the floor and eventually cause complete failure of the room. The length of time required for damage to occur will depend upon soil conditions, quality of insulation, and general construction. No practical amount of insulation can prevent heat from flowing from the subsoil through the floor, and consequent lowering of earth temperature. Insulating materials retard rather than prevent heat passage.

To prevent frost damage, the soil under freezer rooms built on grade or below grade should be ventilated with air ducts spaced at regular intervals in a cinder or crushed stone fill under the subfloor. The ducts can be 6″ or 8″ drain tile on 6′ centers, or 2′ x 3′ concrete tunnels on 16′ centers. Both types should be laid across the short dimension of the room to provide for maximum circulation of air. The opening at one end should be lower than the other to create a draft, introducing sufficient warm air to keep ground temperatures above freezing and prevent formation of frost. When on- or below-grade freezer rooms are 20′ x 20′ or less in dimension, the ventilating system under the subfloor can usually be omitted. Armstrong engineers will be glad to advise you on the best method of guarding against frost formation under freezer floors. Ask their advice while your job is in the design stage. A call to your nearest Armstrong office at that time may save you future trouble and the needless expense of rebuilding a low-temperature room that has been ruined by frost.

SEND US YOUR QUESTIONS: If you have any questions on the construction of low-temperature facilities, please do not hesitate to write to us. We'll see that you get a practical answer. Just address a letter or post card to Armstrong Cork Company, 2405 Concord Street, Lancaster, Pa.

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MATERIALS - INSTALLATION

FOR ALL TEMPERATURES FROM 300° F. BELOW ZERO TO 2800° F.

Lighting by Litecontrol makes this

a Store with $ales Vision



This Trench Variety Store in Minneapolis emphasizes modern merchandising from street entrance to storeroom. Clean lines and functional space-saving keynote the layout — . . . and, of course . . . *an excellent lighting job "wraps up the package."*

Sales-minded planning here dictated the use of Litecontrol Fixtures . . . in this case, the increasingly popular No. 5828 Slimline Recessed Louvered Units. Made for two or three lamps, this unit offers the convenience of hinged egg-crate louvers. Louvers are enclosed in metal frame for safety and are opened from either side by means of spring-loaded catches. Easy to service and easy on the eyes, Litecontrol Fixtures are justly famed for putting *every* product in the best possible light.

For lighting installations of this or any type, you'll save time and trouble by letting your Litecontrol Representative help you with your problem. Try him next time . . . and *see!*

LITECONTROL *Fixtures*

KEEP UPKEEP DOWN

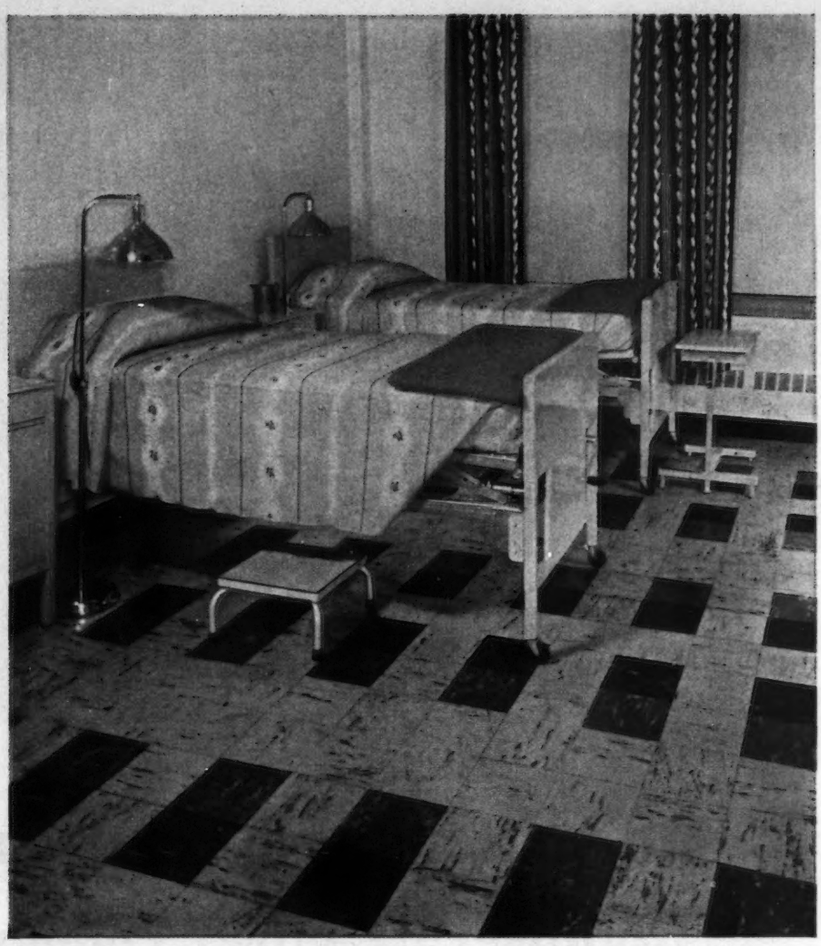
LITECONTROL CORPORATION, 36 Pleasant Street, Watertown 72, Massachusetts

DESIGNERS, ENGINEERS AND MANUFACTURERS OF FLUORESCENT LIGHTING EQUIPMENT DISTRIBUTED ONLY THROUGH ACCREDITED WHOLESALERS

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BRIGHT and BEAUTIFUL...



the *Perfect* combination for hospital *Floors*

TILE-TEX... the *quality* asphalt tile... brings hospitals just the qualities they need for floors, at minimum cost.

When they see a floor that combines decorative beauty and workhorse durability with low initial cost, minimum maintenance and long, long service-life...

Hospital administrators shout, "That's for us.

"Well, look how Tile-Tex* solves their floor problem:" Take your choice of 29 colors...rich, satisfying colors... that come in a wide range of sizes. Lay the tiles in any variety of many attractive patterns.

You can even design your own special inserts. We'll cut them to order, and your Tile-Tex contractor will lay them into the floor.

And, when a Tile-Tex floor is laid, notice how the uniform size of the tile makes joints tight, snug, straight. That, combined with the smooth surface, makes sanitation easier. There's no place for dirt to-cling.

After your Tile-Tex floor has been in use for a while, you'll notice how low maintenance costs are.

That's because Tile-Tex maintenance requirements are so simple. Daily sweeping to remove loose dirt, periodic washing, water-waxing (if desired) . . . that's all.

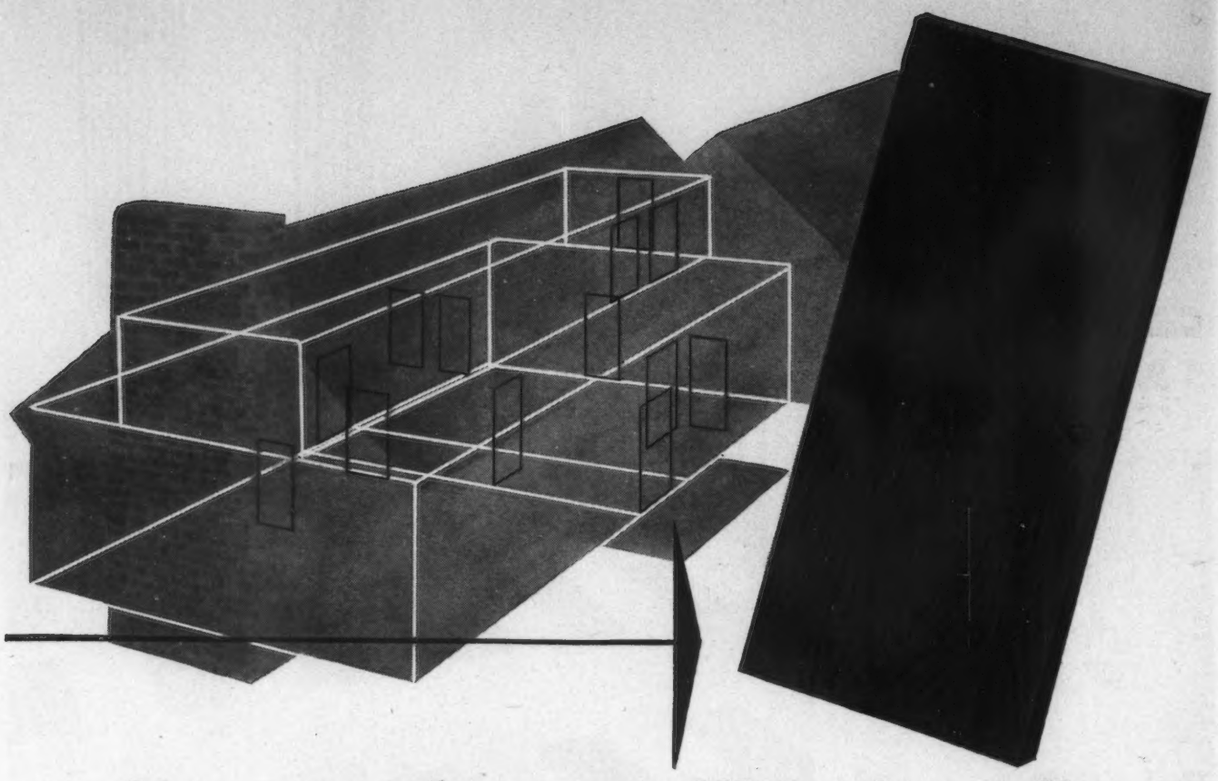
Tile-Tex stands up under hardest service. We've seen Tile-Tex floors, under heavy traffic, for more than 2 decades . . . without visible signs of wear.

Want to hear more? Your local Tile-Tex Contractor can tell you. If his name isn't listed in your telephone directory, write us for samples and complete information.

THE TILE-TEX DIVISION, The Flintkote Company, Dept. H, 1234 McKinley St., Chicago Heights, Ill.

Tile-Tex
PLASTIC-ASBESTOS
FLOORS AND WALLS

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No matter how you fill in the walls Roddiscraft Flush Veneered Doors will Harmonize

Painted or natural finish for the doors? Paper, paint or panels for the walls? Always important decisions . . .

But whatever you and your clients decide, there are Roddiscraft Flush Veneered Doors that will give your interiors beauty and distinction to harmonize with any decorative scheme.

If you need the warmth and beauty of a natural wood door, Roddiscraft Flush Veneered Doors are available in a wide variety of native and foreign woods with faces matched for the best possible effects.

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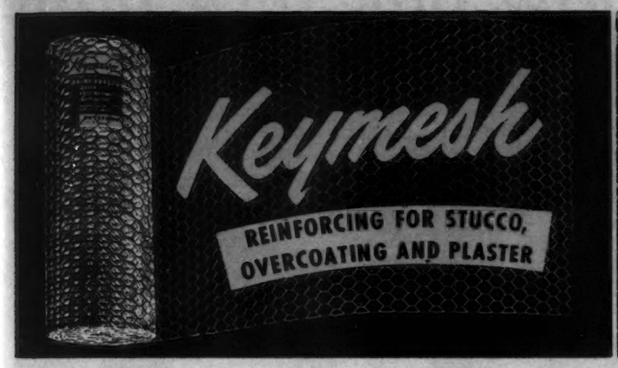
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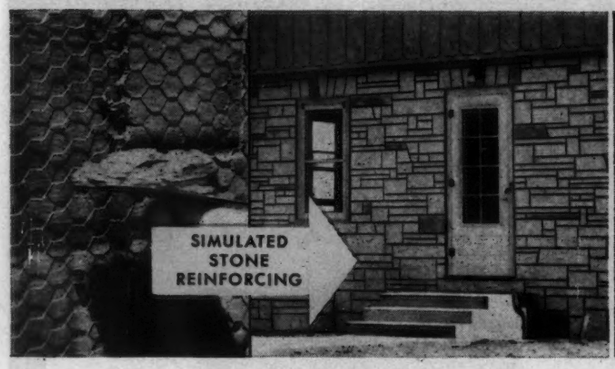
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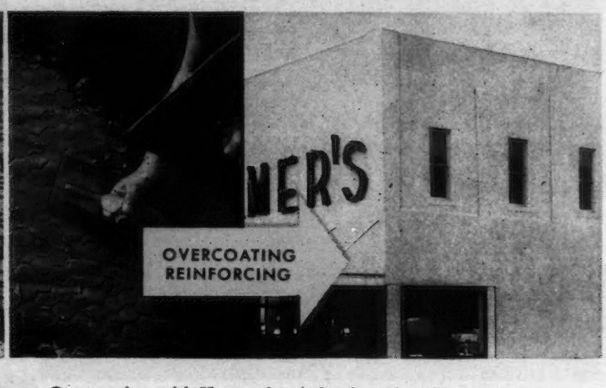




The Keystone System is being used by builders and contractors in many parts of the country to reduce costs, solve material problems and improve construction.

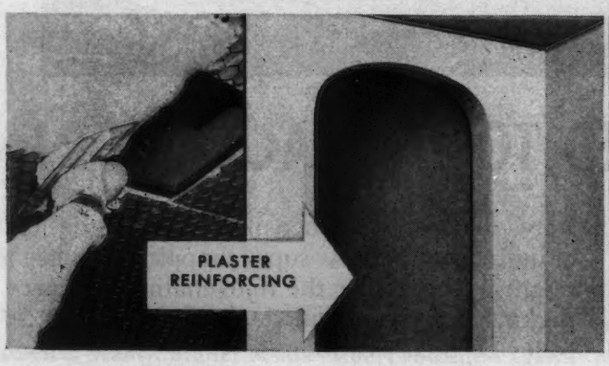
By using Keymesh in stucco applications, speed and economy are combined with lasting beauty. Keymesh reinforcing assures all of the advantages — an attractive, low-cost, durable exterior.

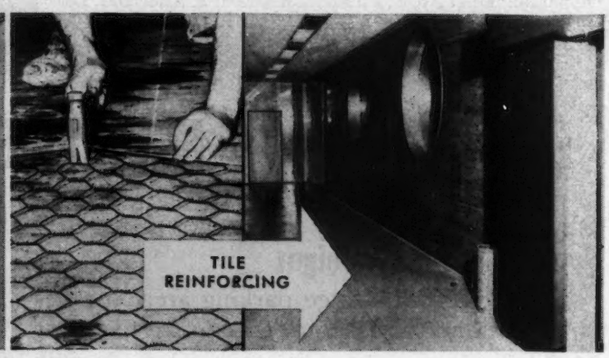




Simulated stone finishes are made structurally sound. The application of base coats is faster. By using Keymesh reinforcement resistance to strain is spread over wider area.

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Interior Plaster can not be any better than the base to which it is applied. Keymesh helps counteract stresses — guard against cracks. Angles, arches and corners are reinforced at the danger points yet worked in without bulky laps or seams.

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If you don't have a copy of this procedure guide, write for it today. It illustrates and describes approved methods for the application of siding and surfacing materials where open mesh steel reinforcing is required.

Keymesh, made of heavy gauge wire, is galvanized—rolls 3 ft. wide, 150 ft. long.



KEYSTONE STEEL & WIRE COMPANY Peoria 7, Illinois



Yes, it's the back door—of the new Ohrback Department Store at Prudential Square on Wilshire Boulevard in Los Angeles—designed to get a full share of business from the shopping center's big parking area. Architect: Weldon Beckett & Associates, Los Angeles.

LOOK WHAT'S HAPPENED TO THE BACK DOOR!

It's not on an alley any more—not in the new shopping centers.

Entered from a huge parking area, it takes on importance equal to or surpassing the front door.

And so it makes sense to plan the rear entrance with the traffic-building power of a Visual Front—the "open" front that lets people *see* in, so more will *come* in.

This isn't just a thought for new stores. Old stores, old neighborhoods—faced with the loss of business to the new super shopping centers—might well consider the rejuvenating effects of parking areas and modern back doors. It could be their salvation.

Of course, the double front opens up great opportunities for design ideas and design work. For more information on materials for Visual Fronts, see your Libbey·Owens·Ford Distributor. And write us for a copy of our Visual Fronts book.

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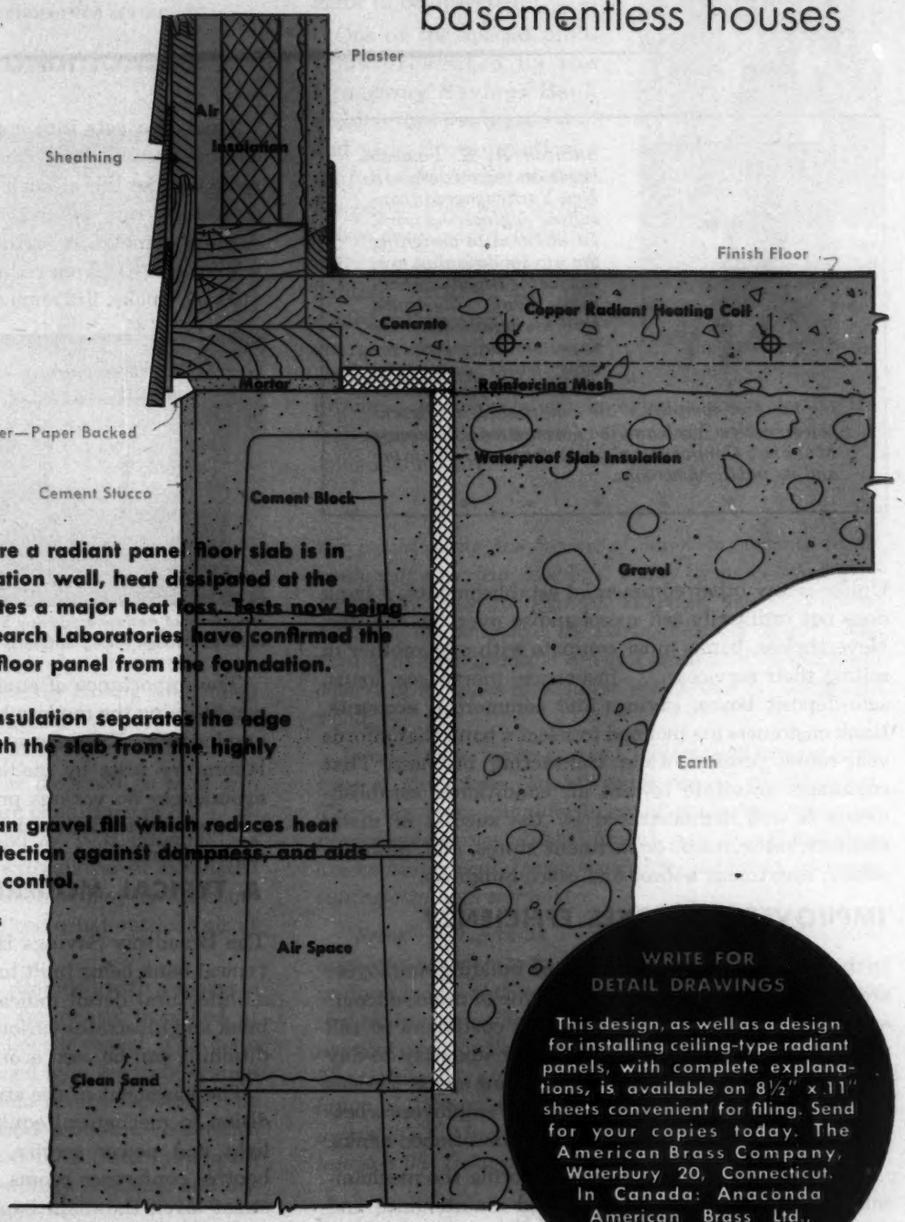
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In this design a waterproof insulation separates the edge of the slab and the fill beneath the slab from the highly conductive foundation wall.

Note also the 6 inches of clean gravel fill which reduces heat loss to the ground, offers protection against dampness, and aids in more uniform temperature control.

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This design, as well as a design for installing ceiling-type radiant panels, with complete explanations, is available on 8½" x 11" sheets convenient for filing. Send for your copies today. The American Brass Company, Waterbury 20, Connecticut. In Canada: Anaconda American Brass Ltd., New Toronto, Ont.

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One of a series of papers prepared by leading authorities on air conditioning. The opinions and methods presented are those of the author and are not necessarily endorsed by the Du Pont Company. Reprints of this, and other articles in the series, may be had free upon request.

AIR CONDITIONING THE MODERN BANK BUILDING

by Sullivan A. S. Patorno, Consulting Engineer



Sullivan A. S. Patorno heads an organization in New York engaged in consulting engineering work. In addition to designing the air conditioning system for the Broadway Savings Bank, illustrated here, his organization has done similar work for other banks and many outstanding jobs, including the first completely air conditioned apartment house in New York and the International Business Machine Corporation's Electronic Calculator and its public showroom.

Unlike many other commercial establishments, a bank does not ordinarily sell merchandise over the counter. Nevertheless, banks must compete with one another in selling their services . . . insurance, mortgages, loans, safe-deposit boxes, savings and commercial accounts. Bank customers are inclined to select a bank that affords year-round comfort when transacting business. That customers gravitate toward air conditioned establishments is well demonstrated by the success of many theaters, restaurants, department stores, and, more recently, apartment houses and office buildings.

IMPROVED EMPLOYEE EFFICIENCY

In the properly air conditioned bank building, employees are generally in a more pleasant frame of mind, encouraging outside business contacts and customers to call upon them. The employee's manner and day-to-day activity will be better in a cooled working space. Besides the higher quality of work, the health of employees is better than that of employees in non-air conditioned banks.

There are many other factors favoring the mechanically cooled bank building. Reduced maintenance and decoration costs, for example. Cleaner work is also important, for in an air conditioned bank the windows are kept closed and all incoming air is filtered. Outdoor airborne dust is prevented from gathering on desks and papers, and there is less discoloration from dust, which materially reduces the frequency of decorating and cleaning.

Dust also gets into computing and other office machines, necessitating frequent cleaning and, in time, reducing the life of such equipment. There is also the danger of rain entering through open windows and causing damage. A further advantage in having closed windows stems from reduction of distracting noise created by trucks, fire engines, planes, and motor cars.



Main floor of modern Broadway Savings Bank building. Conditioned air is supplied through ceiling diffusers; returned through bottom wall registers.

The importance of summer cooling, as a part of air conditioning the modern bank building, cannot be overemphasized. Experience related in research reports, laboratory tests by medical authorities, and our own experiences on various projects and in our own offices have proved to us that the cooling cycle of air conditioning is essential.

A TYPICAL MODERN BANK

The Broadway Savings Bank is a fine example of the typical bank being built today. A brief description of its architectural detail indicates the many functions of a bank and illustrates various departments where air conditioning can be used economically and efficiently.

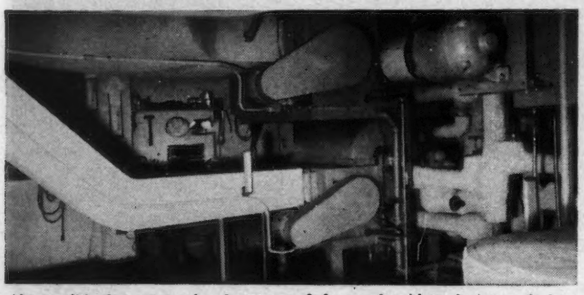
The basement of the structure often includes, in addition to mechanical equipment which furnishes heat, light and power service, safe-deposit vaults, coupon booths, conference rooms, lobby and public toilets. At street level, the main banking space in the Broadway Savings Bank has flat-top counters without wickets, providing a more congenial relationship between tellers and customers. The periphery of the bank is lined with desks for bank officers and executives in charge of loan and real-estate departments. Mezzanine space provides for mechanical equipment on one side; telephone switch-

board operators on the other.

The second floor houses customary banking facilities . . . clerical and accounting departments, president's office, directors' room, conference room and a record vault. On the third floor there is a dining room and completely equipped kitchen. The main fan room is also located on the third floor.

The penthouse above the third floor contains elevator equipment, tailored exhaust fan, refrigerating machines and related equipment such as chilled water pumps and an evaporative condenser that conserves water.

A FOUR-SYSTEM AIR CONDITIONING INSTALLATION



Air conditioning room showing two of four units. Note isolators below supports of lower unit.

The air conditioning equipment in the Broadway Savings Bank building was located and designed for the utmost efficiency and flexibility. The main supply air units, four in number, are located on the third floor with the refrigerating plant on roof level. This arrangement placed the refrigerating compressor in close proximity to the evaporative condenser, thereby eliminating condenser water piping and pumps. By having the chilled water pumps and water cooler in the compressor room, chilled water piping was reduced to the minimum.

The dining-room system was designed to maintain conventional inside temperature conditions of 80° D.B. and 50% R.H. with 95° D.B. and 75° W.B. outside. This system utilizes 100% fresh air with all the air exhausted through the kitchen, giving kitchen employees the benefit of air at 80° D.B. instead of the usual outdoor air at 95° D.B.

The second-floor offices were provided with a separate system since these offices are frequently occupied at times when the main banking floor is closed. The main banking room itself is conditioned by a separate system with ceiling diffusers and bottom return registers. The basement safe-deposit vault, coupon booths, conference room and lobby are conditioned by a third system inasmuch as heat gains there are fairly constant and unaffected by exterior conditions.

The selection of the four systems in this case permits flexibility with respect to time and variable loads. The third-floor location of the fan room reduced vertical-shaft sizes to the minimum. All systems were designed to maintain 80° D.B. and 50% R.H. with 95° D.B. and 75° W.B. outside. Automatic resetting is provided to adjust indoor temperature conditions as exterior conditions become lower.

The basement, main floor and second-floor systems include exhaust fans automatically controlled through dampers to recirculate air and/or discharge it outdoors as required. The control system includes a means for cooling with outdoor air up to the full capacity of the supply system before permitting refrigerating equipment to be operated.



Penthouse contains 52-ton "Freon"-operated compressor and (at left) evaporative condenser mounted on cork pad.

One of the special problems presented by the Broadway Savings Bank architecture was a glass wall and glass doors practically the full width of the building. A separate duct was run just above door height, fitted in with the exterior sign and lighting fixtures, and designed with branches to discharge cooled air downward in the summer and heated air in the winter. Conference and directors' rooms are provided with special smoke exhaust connected to the rest-room exhaust system, to prevent recirculation of smoke-laden air.

• • • • •

Air conditioning has become of major importance in the conduct of American business. Today its many benefits are practically taken for granted. However, as Mr. Patorno mentions in his article, the intrinsic values of air conditioning and refrigeration are well recognized by successful owners of all types of business enterprises . . . large and small.

In all of these, the economical, efficient and safe performance of the system should receive careful consideration. There are many manufacturers of equipment whose dependable machines utilize "Freon" refrigerants and these are enthusiastically recommended by architects and consulting engineers everywhere.

"Freon" refrigerants are safe . . . nonflammable, nonexplosive, harmless to foods, furs, fabrics and finishes. The uniform purity of these refrigerants adds further assurance that equipment using them will continue to give safe, economical and trouble-free service over a long period of time. That is why it is always advantageous to recommend installation of "Freon"-operated systems. E. I. du Pont de Nemours & Co. (Inc.), "Kinetic" Chemicals Division, Wilmington 98, Delaware.

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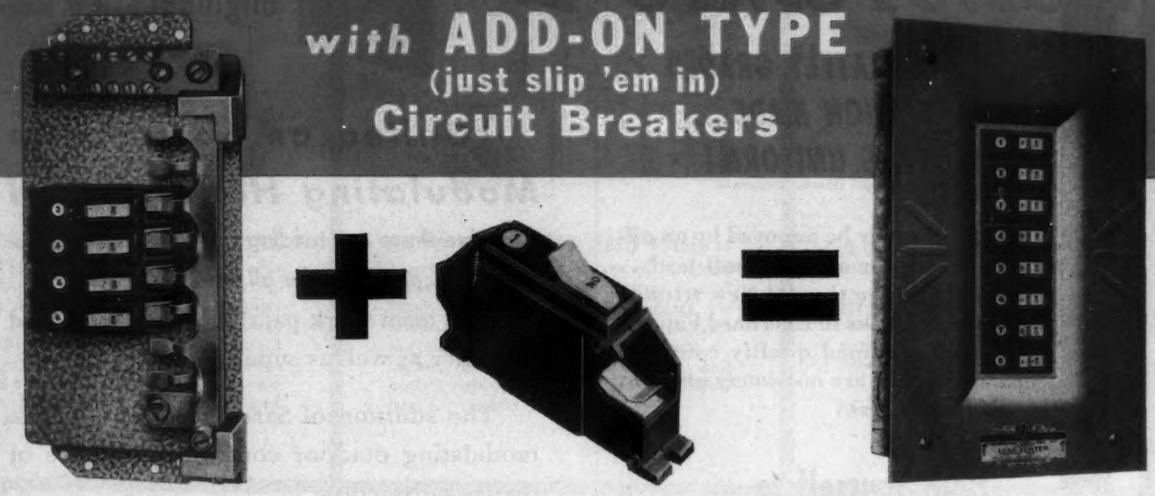
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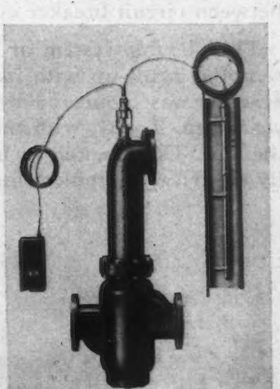


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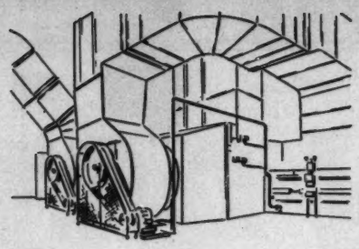
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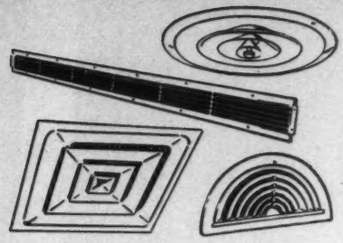
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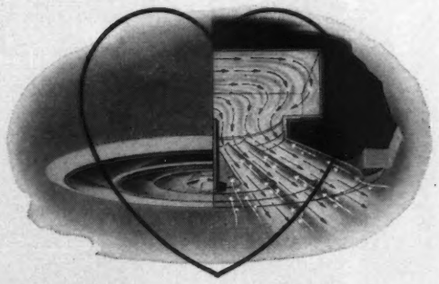
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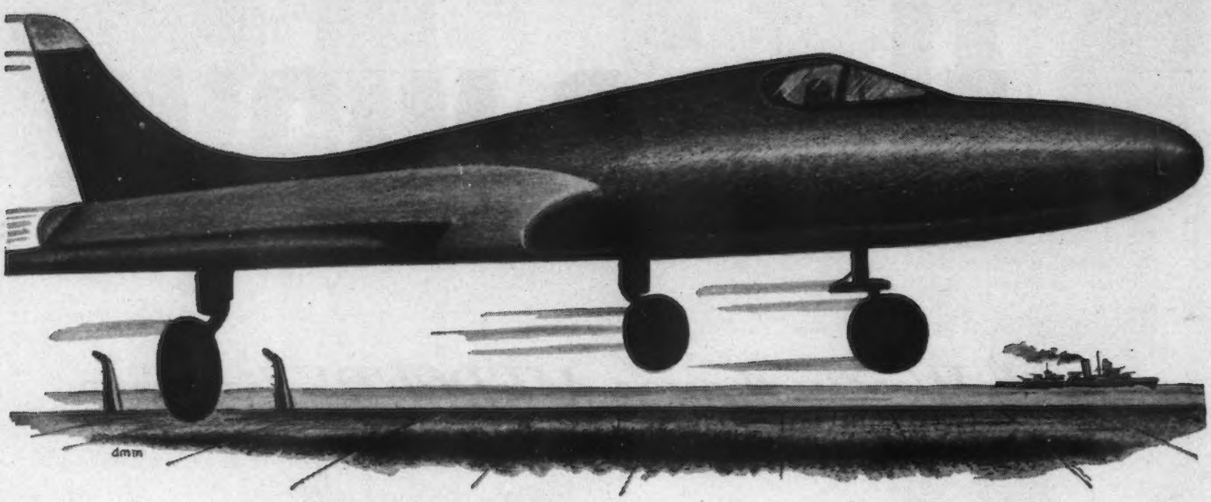
Edgewater Park, Cleveland

J-04295

Ward E. Conrad, Architects



When Uncle Sam says, "GO!"



. . . let Barrett SPEED your Roofing Jobs!

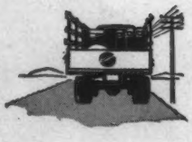
America's great armament program is going to call for a lot of speed in a lot of places. New plants will have to be put up—and old ones reconditioned—"almost over night."

This, in turn, is going to call for a great many new roofs. If you find yourself in need of a new roof in a *hurry*, you can't do better than to turn to Barrett. Barrett can give you the world's longest-lasting built-up roof in the shortest possible time. For Barrett *speeds* your roofing jobs in 4 important ways:

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3 Barrett speeds application. Barrett does not have to rely on outside sources of supply for roofing pitch and felt. Because Barrett Specification* pitch and felt are made in our own factories, production can be controlled to meet demands. Your Barrett roofer can be sure that he will get the materials he wants when he needs them. No time lost on the job! Moreover, you can be sure that these materials will be of uniform high quality.



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CASE HISTORY NO. 5



Showing how Chrome Lock permanently seals MACO casements against moisture, air and dust

CHROME LOCK is an impregnated felt sealing material for use between metal-to-metal joints or other joining surfaces. Its resistance to the elements makes it ideally suited to the metal window field as both a sealer between sectional flanges (as in the MACO installation below) and as a bedding or glazing tape for channel type sash.

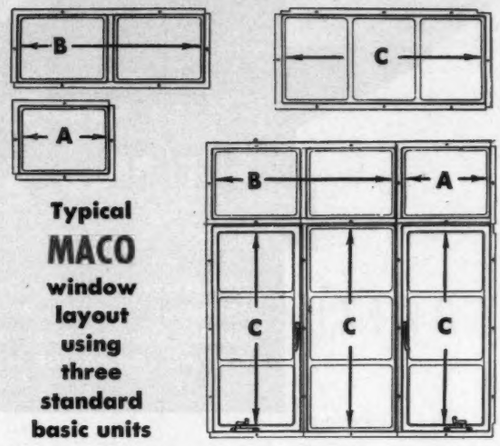
CHROME LOCK is important to the manufacturer from a lower application cost standpoint and is equally important to the Architect and building owner because of its longer sealing life.



READ THIS ACCOUNTING OF THE MACO TEST:

THE MACO CORP., of Huntington, Ind., tested Chrome Lock in comparison to all available caulking compounds and plastic tapes. The application is to seal between the cast-on flanges of their sectionalized cast aluminum casement windows (as shown above). Chrome Lock was approved and is now used exclusively as a result of the following:

1. **Pressure-sensitive adhesive back eliminated glueing and cut labor cost considerably.**
2. **A pre-determined amount of material is used on each installation. No waste.**
3. **The seal is positive and without voids.**
4. **No clean-up required as when caulking compounds were used.**



Typical MACO window layout using three standard basic units

The red lines on this schematic drawing indicate the joints on which Chrome Lock is used when sealing a typical MACO sectionalized casement window.

Chrome Lock HAS MANY USES

- **METAL BUILDINGS**—Inhibits electrolysis between dissimilar metals. Weatherseal for joints.
- **TUB SHOWERS**—Between jamb and wall and tub top. Prevents water seepage.
- **VENTILATION OUTLETS**—Between outlet and wall. Prevents soot or dust from discoloring wall.
- **SINKS**—Under mouldings on sinks and restaurant counters.
- **WATER PIPES**—Pipes wrapped with Chrome Lock permanently prevent damage resulting from condensation dripping.
- **METAL FLASHINGS**—Prevents moisture from penetrating between metal trim sections.
- **AIR CONDITIONING**—On flange joints. Adhesive back speeds application.

In addition to these proved applications there are very likely other uses in the building field that are yet to be uncovered. Should you have a particular sealing problem which Chrome Lock may help solve, your inquiry is invited. Samples will be gladly supplied on request.

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ATTACH THIS COUPON TO YOUR LETTERHEAD

Spring Packing Corporation
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a sod roof—modern version

...with an assist by Ruberoid



OWNER Lowell E. Walter, Quasqueton, Iowa
ARCHITECT Frank Lloyd Wright
BUILDER Kuchara & Assoc., Des Moines, Iowa
ROOFING CONTRACTOR Powell Roofing Co., Cedar Rapids, Iowa

When Frank Lloyd Wright envisioned a turned-up concrete slab roof, topped off with a lawn, on this beautifully graceful house, Ruberoid supplied a vital requisite. That was a built-up roof that would not rot or disintegrate under the surfacing of black earth, peat moss and moisture which a "roof lawn" requires.

When seen from the hill above, this roof appears as a pleasant grass terrace—happily wedded to the surrounding slope. Besides the design and landscaping appeal, this type of roof provides factors comparable to the effects achieved by water-cooled Ruberoid Built-Up Roofs (See diagram).

This is another unique example of how Ruberoid Built-Up Roof Specifications can solve your needs for *every* kind of roof design or use . . . and help you serve your clients better.

You're bound to find Ruberoid Roof Specifications helpful in planning more efficient roofs no matter what type of building is on the boards. If you're not acquainted with Ruberoid Roof Specifications, you can get copies from the nearest Ruberoid Sales Office or your local Ruberoid Approved Roofer.

The relative cooling effect of a roof pool, graphically demonstrated in this diagram, will also give some indication of the effects of a moist garden roof. The pool depends primarily upon reflection or water evaporation for effectiveness. Based on controlled scientific tests, the chart shows that water in any form is an excellent barrier to solar radiation.



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Ruberoid makes every type of built-up roof—Smooth Surfaced Asbestos, Coal Tar Pitch with gravel or slag surfacing, and smooth or gravel-and-slag surfaced Asphalt . . . in specifications to meet any need. Ruberoid Approved Roofers are not prejudiced in favor of any one type. You are assured of centralized responsibility, smoother operation, uniform quality with Ruberoid built-up roofings.

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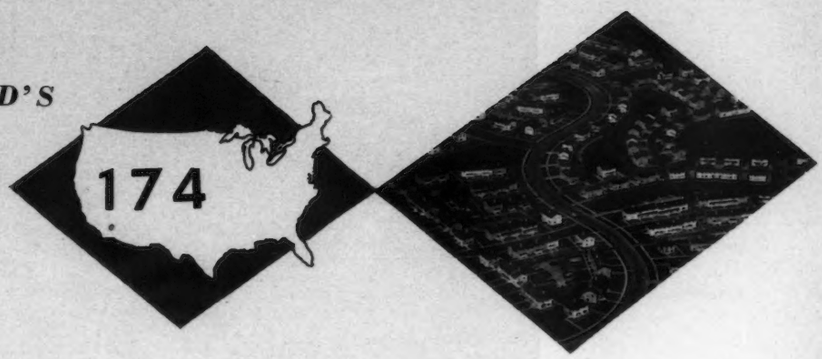
built-up roofings

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BUILDING TYPES STUDY NUMBER



MOBILIZATION HOUSING

MOBILIZATION will certainly bring new housing, but this time it will not be just "housing." In place of "defense housing," just for "the duration," we shall now be building for permanence. We shall build some new towns — for new mills, mines, atomic developments. Some existing towns will see great changes. We shall be thinking about dispersal of factories and people, and making a start on what is grandiloquently called "rebuilding America."

The task here is *planning.*

Carl Feiss states the rather urgent case for planning on page 111.

The best current proving ground of community planning is Park Forest, Ill., a completely new town near Chicago. Our progress report on Park Forest is extensive, for here was encountered virtually every problem — economic, physical, social, political — which could possibly arise in building any new community.

The study closes with a few examples of postwar housing which contain some suggestions for smaller "mobilization housing."





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Harry Williams Aerial Photos

PARK FOREST, ILLINOIS

PROVING GROUND FOR COMMUNITY PLANNING TECHNIQUES

American Community Builders, Inc., Philip M. Klutznick, President

Loebl, Schlossman & Bennett, Architects and Planners

Elbert Peets, Consultant, Site and Town Planning

Kincaid & Hutchinson, City Planners and Architects (Planners, Sub-division Area)

Consoer, Townsend & Associates, Consulting Engineers



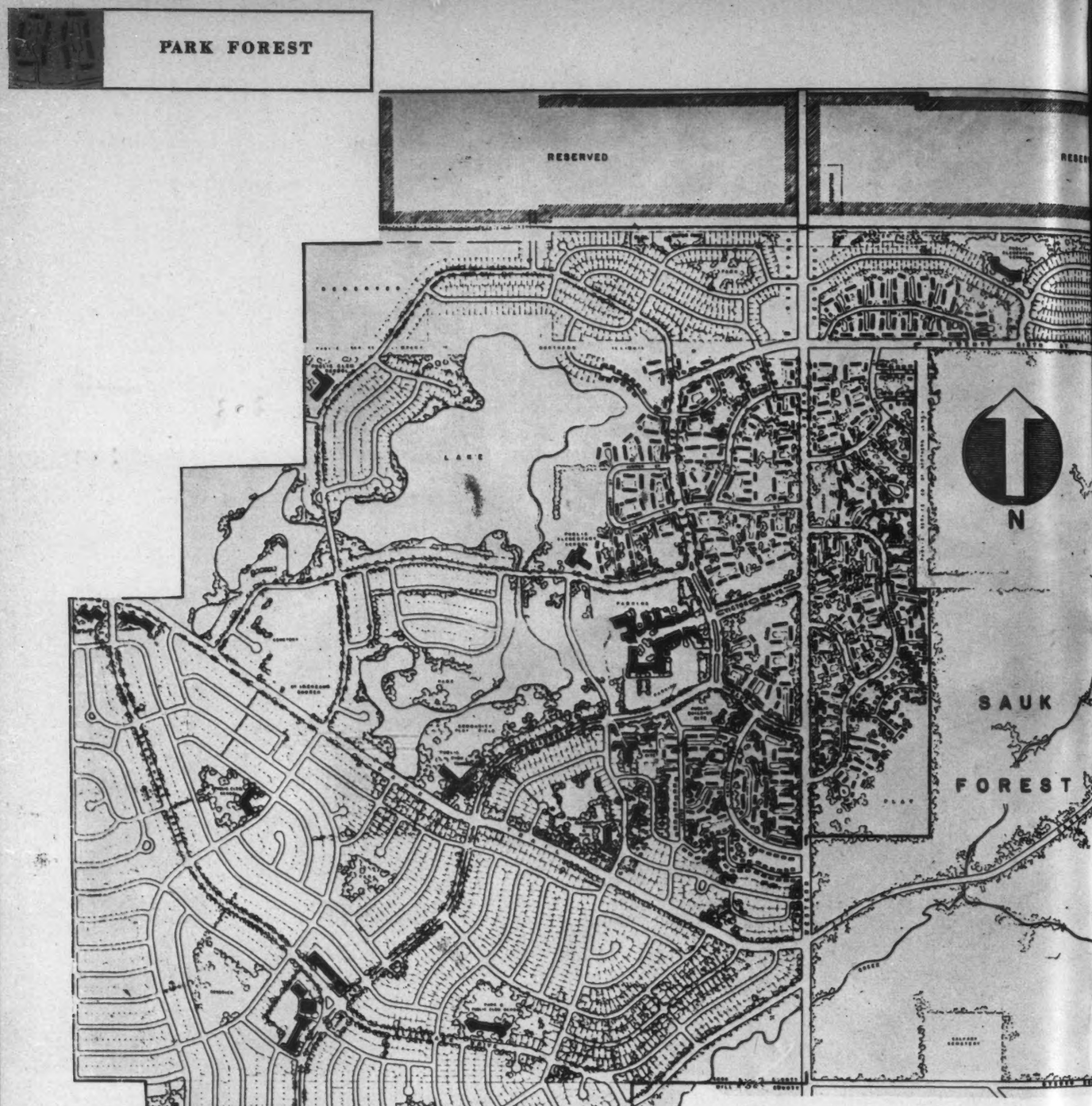
Hedrich-Blessing Studio Photo

1 (See plan page 99)

PARK FOREST is a new town, not a housing project. This distinction gives it significance, as a proving ground for a wide variety of planning theories. As such it becomes, fortunately but inadvertently, a test area for the sort of ideas that architects and planners will be called upon to produce in developing new communities for mobilization industries. It is especially noteworthy in showing the extent to which planning must take account of social and political problems of a community which must pull itself up by its boot straps.

In the five years since its conception, Park Forest has encountered virtually every theory, every problem, of community planning and building. It has made its own way — it is strictly private enterprise — without any governmental munificence; indeed red tape is not the least of its troubles. It has had to improvise on many an unanticipated problem — such as how to get a cemetery started, or how to decide the dogs-vs.-no-dogs question. In short it has experienced all of the thrills and pangs of bringing forth a new American town via the method of scientific planning.

The decision to tackle it this way was quite deliberate. Park Forest is an attempt to prove that the planning method can produce better communities than the Topsy



For other planners, the reasons Park Forest did not develop along different lines are probably as interesting as the reasons for its present form.

The Neighborhood Concept. *— The earliest sketches show well defined areas centered about elementary schools with greenbelt carefully separating one from another. This schematic approach was abandoned for a number of reasons:*

1. Because it came to be felt that communities of people exist only because of common interests, and for most interests



approach. It is an attempt, moreover, to do it all by the most enlightened social concepts, to prove that this is good business.

As a matter of fact, Park Forest has represented some fairly enlightened searches for new ways to make a dollar, or a nickel, out of the great "game" of subdividing and building. Philip M. Klutznick, its president and personal powerhouse, says that Park Forest tries to go the meat-packing industry one better, and utilize the squeal as well as the ham.

In evaluating Park Forest, it is important to remember the difference between creating a town and building a housing project. This distinction was clearly established early in the project, and it affected a great many important decisions. A housing project, for example, would not have ventured so far from Chicago (28 miles), and would not have tackled so many problems of site development, provision of utilities, schools, churches, shops, or the tricky problems of establishing new governmental units, new school boards, police and fire departments, and so on. Chicago provides an economic base for Park Forest, but the new town had to be far enough removed to be able to establish its own patterns.

Business Principles

The objective of creating a town was by no means altruistic or idealistic in purpose. It was for profit. The basic premise was that a subdivider or builder creates many values on which he does not realize. He takes his quick profit on the main items, land and buildings, but neglects the buying power newly concentrated in the community. American Community Builders envisioned a larger operation, with a substantial number of rental units under long-term ownership, a profitable shopping center, several sidelines, on the theory that this was the way to profitable operation without excessive income from one single item, say rents.

In the beginning the progenitors foresaw the possibility of building and reselling electric power (submetering), reselling gas, selling their own water, oper-

---

adults will have to go outside the elementary school perimeter for major recreation, their particular church, their particular club, for interests such as dramatics, fire department, stamp club, and so on.

2. Even the school district must have flexible boundaries as school population changes in number and age group in each area.

3. Another factor to remember is that for the same length of utilities one has the choice of open space between buildings or between groups of buildings.

4. Too close identification with a small part of the total town can prevent the best attitude toward the total town — as it is, there is very strong attachment of those in each parking court, so much so that studies by students of government have pointed out the factionalism that exists in the growing political structure.

The railway lines at the north for a long time suggested an extension of commuter service and location of the shopping center at that point. It slowly became apparent that, due to costly engineering, a station would be far in the future, and bus transportation would be prime, and a central location for shopping was indicated.

The southern half of the site is relatively hilly for Chicago; the central area was a golf course so that the fairways and trees became the basis of some planning. It is interesting to note that on steep areas adjusting buildings to contours is self-evident, but on almost flat areas it can be sensitively done to minimize drainage problems again arriving at a relatively "free" plan.

ating their own bus lines, and so on, in addition to owning and leasing rental units and store buildings, not to mention all of those items repeated in an industrial subdivision on adjoining land.

Business Results

These sidelines have not all developed, but the main items are proving out well. The sub-metering idea largely disappeared in the practical matter of getting into operation a really large installation of utilities, though the company does operate its own water system on a commercial basis. The bus lines similarly went to existing outside enterprise.

The shopping center seemed to loom larger, however, as the project developed. The shops are leased to merchandising companies on a selective basis, and company income will grow as store volume increases and as new shops add to the center.

Shopping center tenants have a solid base of purchasing power in 3000 families already in the rental units. And the house-for-sale program, now just really started, will add another 3000 to 5000 families directly located in Park Forest. Studies have shown, moreover, that the shopping center may be expected to attract shoppers (already is) from a substantial surrounding area, as new stores are added and as people come to appreciate the convenience, the pleasantness and the parking space of the center.

Lesson No. 1

The many complications of so sweeping a beginning as Park Forest produced the first lesson in community building. In Klutznick's words it is "that no organization has all of the skills necessary to do the complete job. . . . It is wise to proceed from the premise that wherever an activity or skill is available through another organization, that organization should be utilized. . . . We in Park Forest could well have gone into the bus business. There were some who cast up figures showing that starting from an initial loss we could build into a nice profit. . . . In spite of this we sought out an existing bus transportation company, utilized their skills and absorbed portions of their early losses, rather than to go into the business ourselves." Much the same thing happened in gas service, and in electric service. Even though Park Forest anticipated its problems of utilities, it had occasion again and again to be impressed with the magnitude of the task, and its importance.

3 (See plan opposite page)

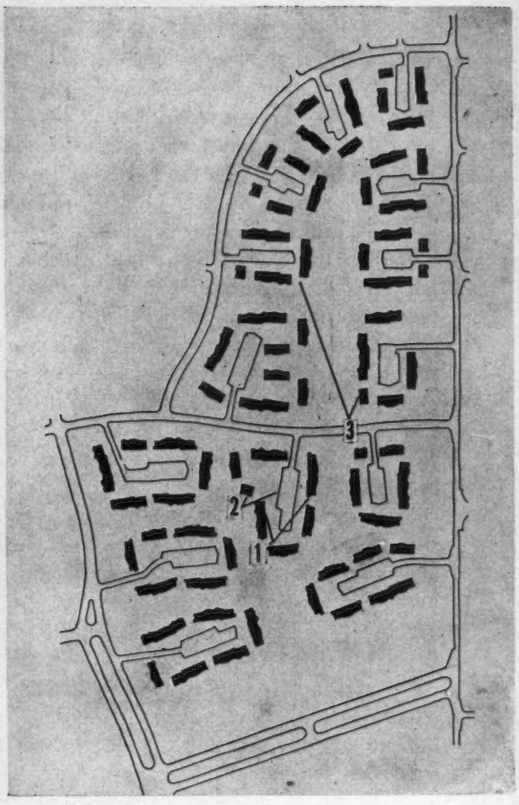


2









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Basis of residential planning in the rental area is a scheme of courts and malls. Buildings are grouped around a parking court (there are no garages), but the space between groups of buildings is kept open to form a fairly continuous mall. The courts tend to become informal and active — each has a small "tot yard." The more open areas appear more formal and are quieter. The parking courts identify a neighborhood group and tie close neighbors together through daily activity. The open areas tend to tie groups of buildings together and broaden the outlook somewhat

Utilities for Mobilization Housing

Turning to the problems of other new communities, Klutznick says: "From purely a physical point of view, my experience in the last war [administrator, Federal Public Housing Authority] and the experience in Park Forest lead me to believe that the basic problem that will confront community development is the lack of adequate utility installations in the areas of need. The growth of our population and the deferral, over many years through the depression and the last war, of utility replacement programs as well as extension programs, will find us in a difficult position, if the mobilization authorities embark on any degree of dispersal into new areas without simultaneously considering the demands of the population that will have to man the machinery. I see nothing in the current scene to make me happy in the thought that we learned our lesson. The building of houses is the easiest part of the mobilization housing job. The big problem, from a physical point of view, is to develop the first plan, provide adequate sewage disposal, water and other essential utilities without which a house becomes merely an outhouse. These problems we had to face in Park Forest and we believe we conquered them.

"The three ingredients in the handling of the physical problems are a good and feasible plan, ingenuity in its execution and available funds, either one's own or through a public body. Long ago, I took the position that in any future mobilization program, the first and most important step is to ascertain quite early the areas that will be affected by expansion and to undertake to extend or create the necessary basic utility systems. Without such steps, tremendous waste of time, men, money and material is inevitable."

Social Aspects of Community Building

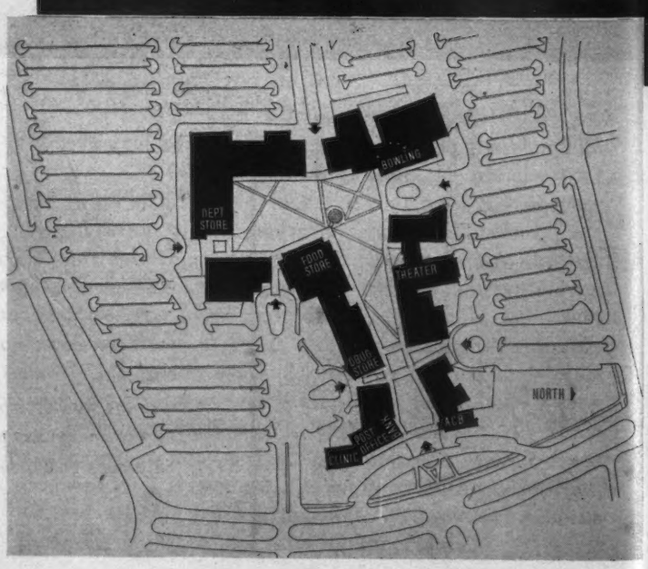
"The principle that has been enunciated above (use outside skills), which had motivated us on the fronts indicated, has also been a guide in our treatment of community problems, such as municipal government, fire and police protection, medical care, schools and churches. We have been, and still continue to be, criticized for our position.

"There are some people who feel that we should do many things ourselves which we agree could be done more quickly and perhaps at less cost, but with ultimate disadvantage to the growth of the community. We have taken the position that public authorities, school officials, the people themselves, whether they be tenant or home owner, must be involved in the community building process from the beginning and must assume their share of the load in terms of administration, thinking and execution. We have never side-stepped our contributory responsibilities in terms of dollars.

"For example, on the church front, before a single line was drawn in our plan for Park Forest, the Church Federation of Metropolitan Chicago, the Cardinal's office, the Lutheran Synod, which is not in the Federa-







Loebl, Schlossman & Bennett planned the shopping center to be informal in layout, efficient in merchandising methods, and gay and attractive in appearance. The plan seems quite free and casual, but actually it is carefully worked out for good merchandising. It has no focal point, no "100 per cent location," no obvious concentration of traffic, since the parking space virtually surrounds it. Free forms of the store buildings bothered the tenants in the negotiation stage, but they soon learned that the buildings

Hedrich-Blessing Studio Photos





were thoughtfully planned for selling, even though they didn't meet standard layouts of chain stores, and came to appreciate that the free forms sprang from the true selling function. Store buildings are kept in a uniform white, and store tenants have been glad to sacrifice their traditional colored fronts for the pleasant brightness of the center. The shopping center is lighted at night, as a bright center of attraction. Covered walks shelter pedestrians between stores — no auto traffic can enter the center itself, though there are access turn-arounds at several points so that cars can come close for heavy packages. Landscaping will add a note of gaiety, and contribute to a fair-like spirit that is an especial objective of the planners

tion, and the Episcopal Bishop, who likewise is not in the Federation, were involved in the planning aspects. We agreed to and have contributed improved land; but we have insisted, as a condition to that contribution, that they organize their congregations and assume the responsibility for structures. There have been some delays. You don't build a solid church structure on prayer without action, even if that sounds blasphemous. Consequently, we have only one church completed, the Trinity Lutheran Church. The Catholic school, church and accessory buildings are well along and should be completed within a few months. The United Protestant Church is out for bids next week, as is the Episcopal Church. Ministers and a Priest were long ago stationed in Park Forest and they and their adherents are building the churches.

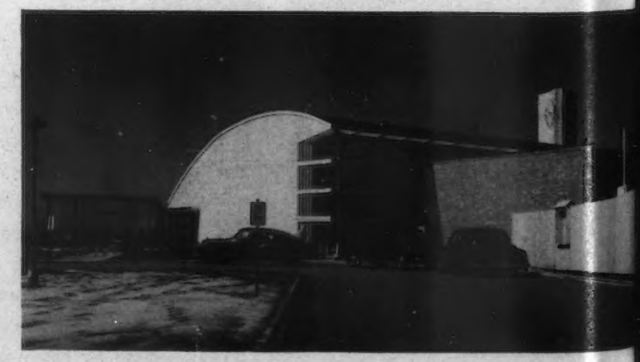
"In connection with the school problem, which in many ways has been the most aggravating of them all, particularly under the Illinois law, we have pursued a similar course. The largest part of our development lies in what was once a rural district which never had enough resources to support even a minimum schoolhouse for its 20 pupils. That portion of Park Forest lying in this district was withdrawn and the school district of our own tenants was established at the beginning. From the start, we outlined a program in our own thinking which from time to time we negotiated with the school board. In view of tax lag and bonding power lag, we undertook to subsidize the school board by contributing to their budget for the last two years. We provided temporary facilities during that same period of time. Together we established a non-profit corporation to build the first permanent schools, to which our company contributed the necessary funds. The first permanent school building is in the process of completion. When it is complete and as soon as the school board has the necessary bonding power in a few months after its completion, under their contract with us they will acquire it and issue the bonds. The second school goes out for bids this month and will be built on exactly the same pattern. A third school is scheduled to start before the end of the year. By this process, it is true that we have involved our company financially, but what to me is more important, the people themselves have had their feet thoroughly wetted in the problems of school administration, school budgets, school operation, so that we can properly look forward to one of the best school systems in this whole area, when it has matured in the next few years.

"In general public administration, we have pursued a similar course. We encouraged the incorporation of the village when we only had 150 families resident in Park Forest. We were operating a private police force and using a contract service for fire protection. In the first year we contributed to the new village sufficient funds so that they could get the Department of Public Safety organized. We have a crackajack police department, small but effective, and a top-notch volunteer fire

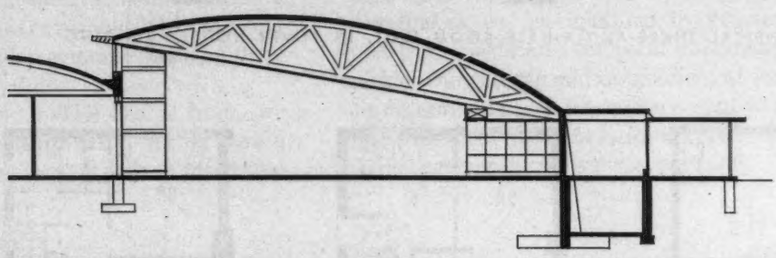




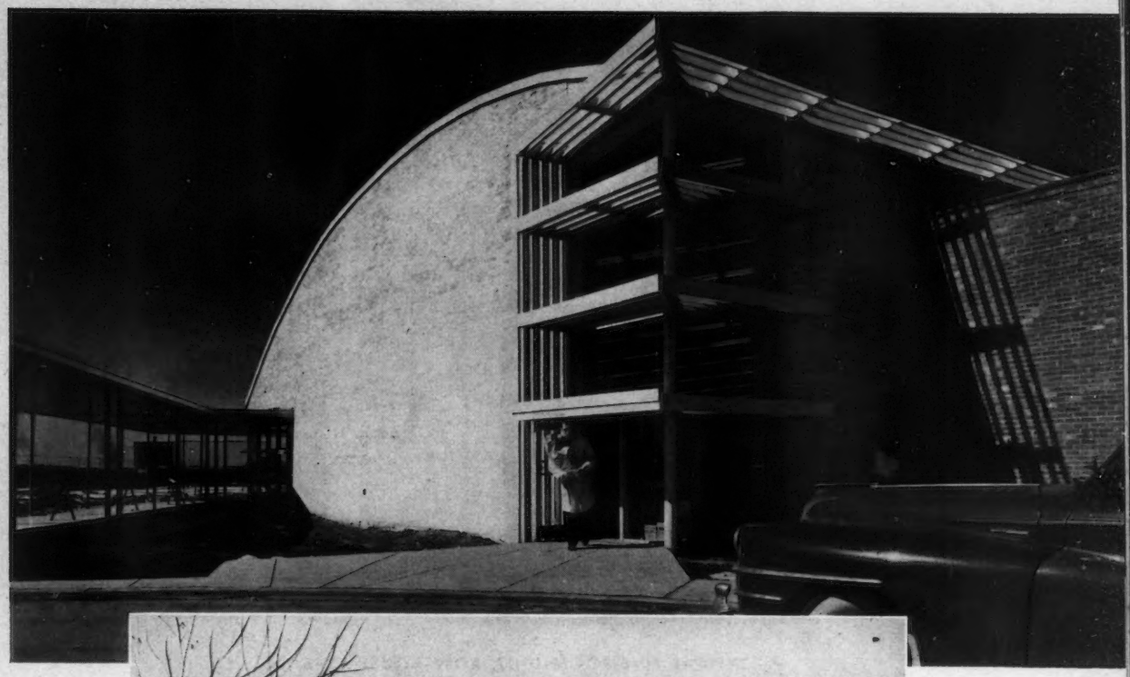
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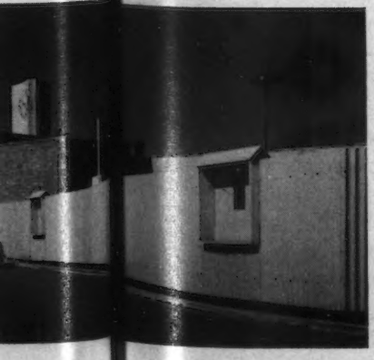


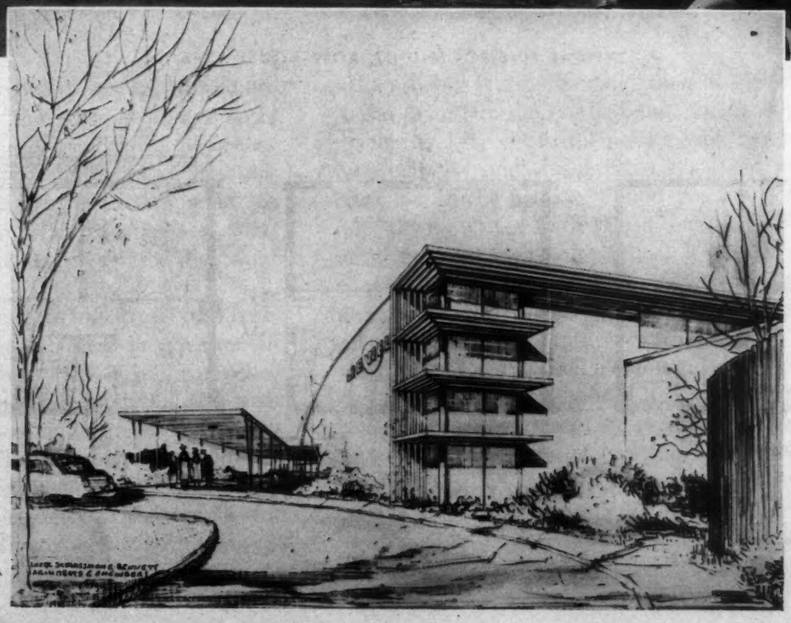
Jewel Tea was the first of the larger store tenants in Park Forest. The building done for their tenancy by Loebl, Schlossman & Bennett was something of a surprise to the chain's merchandising experts, but has proved to be fine for selling. Aisles for grocery items run diagonally, pointing toward checking counters. By the simple device of tilting the large trusses the architects have given the store a clerestory; the sloping ceiling adds noticeably to the openness which a clerestory section seems always to contribute



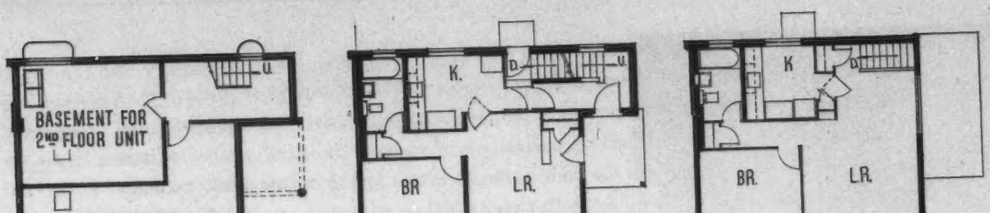




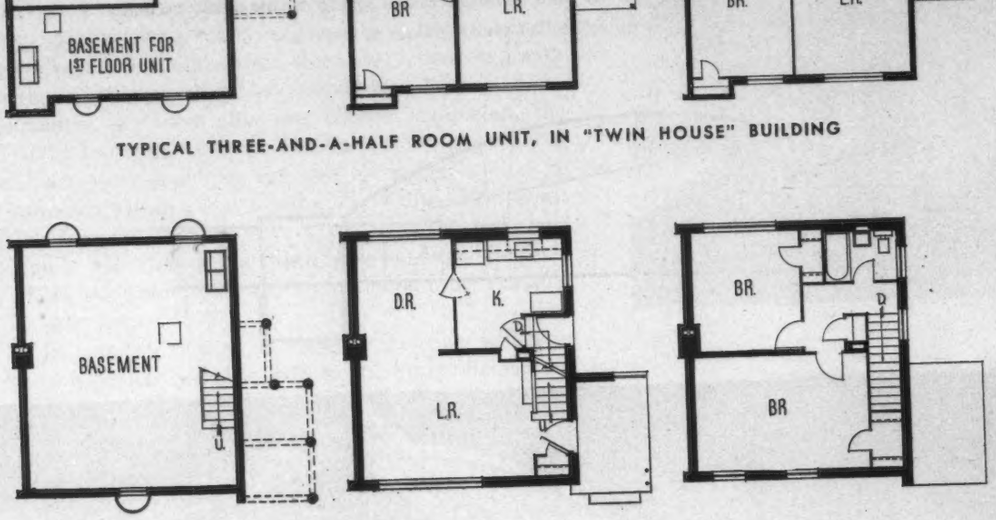




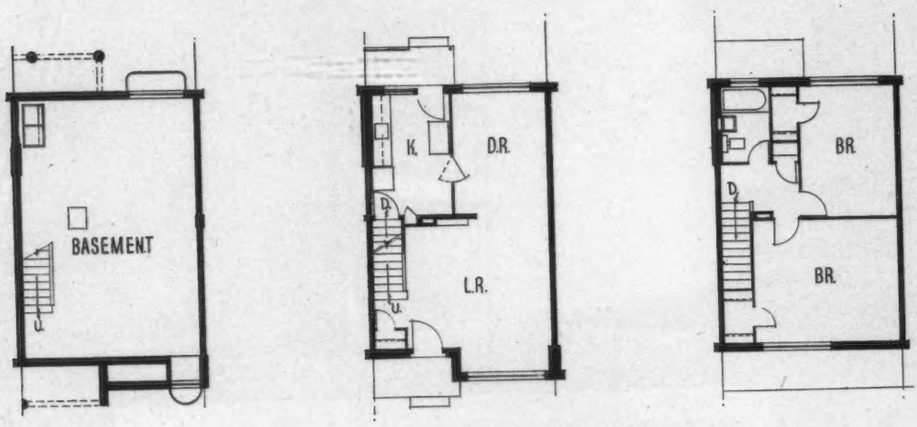
TYPICAL RENTAL UNITS — RENTS: $75 TO $99.50



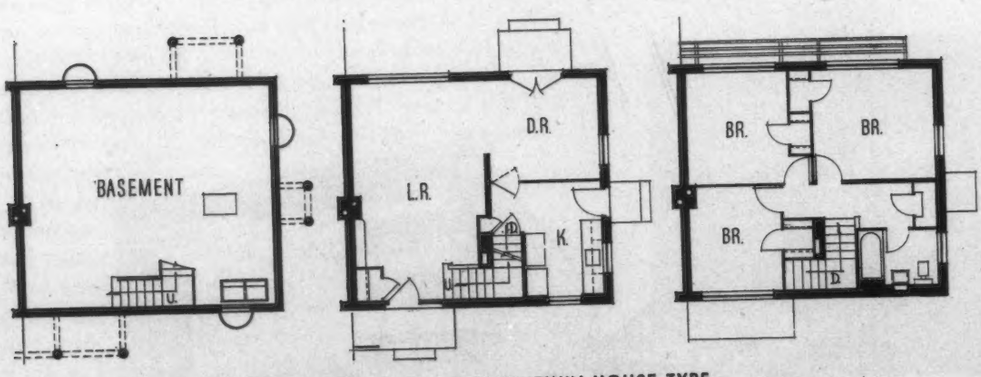
TYPICAL THREE-AND-A-HALF ROOM UNIT, IN "TWIN HOUSE" BUILDING



TYPICAL FIVE-ROOM UNIT, TWIN-HOUSE TYPE



TYPICAL FIVE-ROOM UNIT, ROW-HOUSE TYPE



TYPICAL SIX-ROOM UNIT, TWIN-HOUSE TYPE

3 9 15 18 FT



department to whom we contributed the first two pieces of equipment. It would not be fair to say that all these things happened easily. Quite to the contrary, there were periods when it would have been much easier for us to discharge functions ourselves than to haggle and argue with people who were learning the practical aspects of building a town. But as a result, we have a maturing town government with a sense of responsibility growing each day. We have a public plan commission and a town hall that is in process of erection.

"On the medical care and public health front, we have not made as much patent progress. We do have a citizens' public health committee. We have interested a group of doctors and public health specialists who are planning for the day when the hospital and medical center will emerge; the latter, not too far off, the former some way off. We are just beginning to formalize steps on a community recreational program. Here again the principal stimulus comes from the people and what we ultimately develop here will be that which they want and, we hope, can afford.

"By example, I have tried to illustrate our basic philosophy. One of the great failures in government operation of villages and towns that it was compelled to build or undertook as an experiment was the great difficulty it had in withdrawing from responsibilities that it once assumed. Another inequity, perhaps, was the development of public services of a gilded character and altogether beyond the capacity of the people who live in the town to pay for. In connection with this type of criticism, I must point out that it probably could not have been otherwise. Government is subject to pressures to a greater degree than we are as a private company. Not only is it subject to pressures, but it does not have the same type of balance sheet with which to compare itself as we do. While we believe that we are a thoroughly enlightened type of company in this field, nevertheless, we are inhibited by practical considerations from yielding to the point of committing business suicide. Our income and outgo must at least balance in our determining how far we may want to go in meeting the demands of residents in Park Forest. This is a strong barrier against outright disproportions.

Hedrich-Blessing Studio Photos





"Probably more important than dollar consideration is the fact that the method that we have pursued, in my opinion, tends to fill more people with a sense of responsibility and certainly makes them more knowledgeable, in the fields of public concern. As one public official who visited Park Forest once said, 'This is probably the most significant school in civics in all of our country'. Our population is primarily youthful. They are people who would be lost in the jungles of great metropolitan communities. Perhaps they would live their entire lives in such a community without knowing the significance of a school budget, what it takes to make a fire department or police department run, or how you pay for any of the things that are implicit in public operation. Many of these people are bright and able people with fine academic background who, if they continued to live in large metropolitan centers, probably

never would become members of plan commissions, school boards, village boards, recreational committees or public health committees. Here in the impressionable stage of their lives they have been compelled to assume significant responsibilities in their community. It would be foolhardy to say that all have met the challenge. But it would be untrue not to state that the growth and understanding of many has been something at which to marvel.

"What has all this to do with the potential contribution of what we term private enterprise in the forthcoming mobilization effort? Nothing more than to point out that the government would be well advised to lay the ground work to perform only those tasks which it must essentially perform in order to keep the mobilization machinery going. In the field of town development in areas completely rural and desolate in character, government must substitute for non-existing public agencies on an interim basis to finance utilities, schools and similar public services. Beyond that, to the extent that the people to be served can afford the production, private enterprise should be called upon to do the job. There can be a melding of responsibilities which should result in the development of permanent communities in which the government does not stay as a vested interest exposed to all of the pressures and responsibilities which it is not established to discharge. By collaborative interest we can build communities in which the people who live there discharge the normal functions of communities."

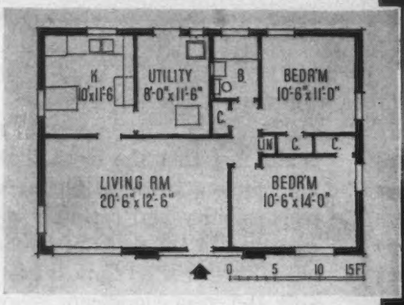
Planning Park Forest

While details of the original scheme have changed, the basic concept and its major elements have remained constant, and Park Forest has developed according to its schedule. There was one major change — the rental units were built first instead of houses for sale. One reason was the great need in postwar years for rental units, especially for married veterans. Also 608 financing made rental units particularly attractive. The main reason, though, was that building rental units was the

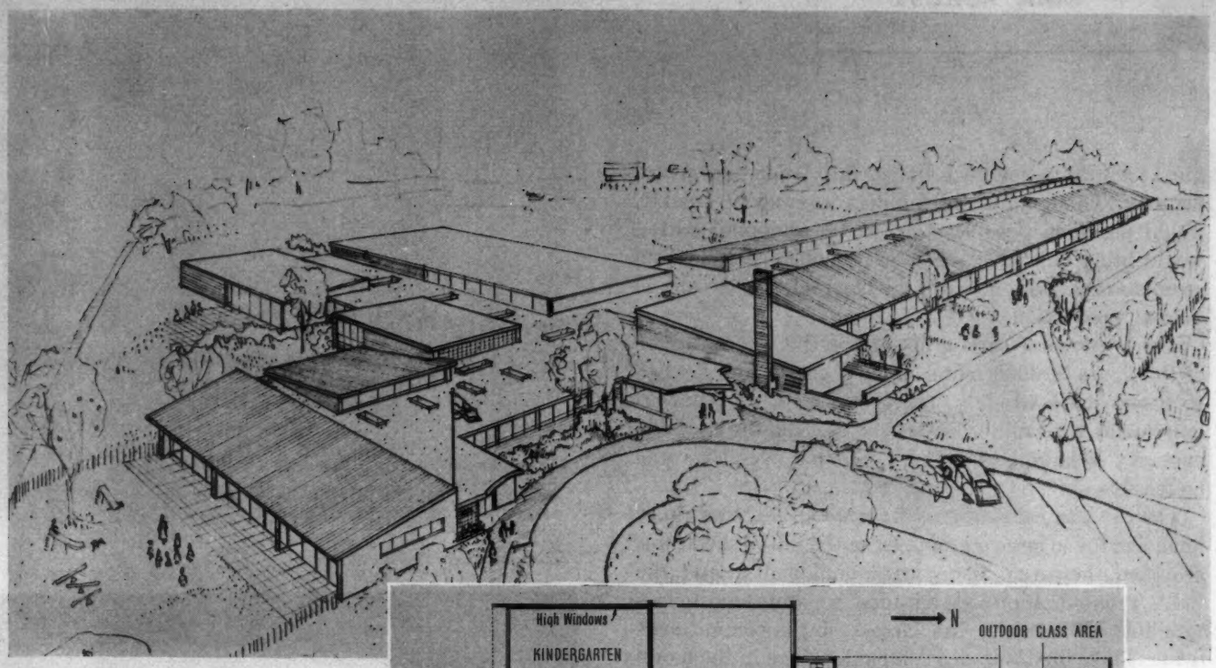


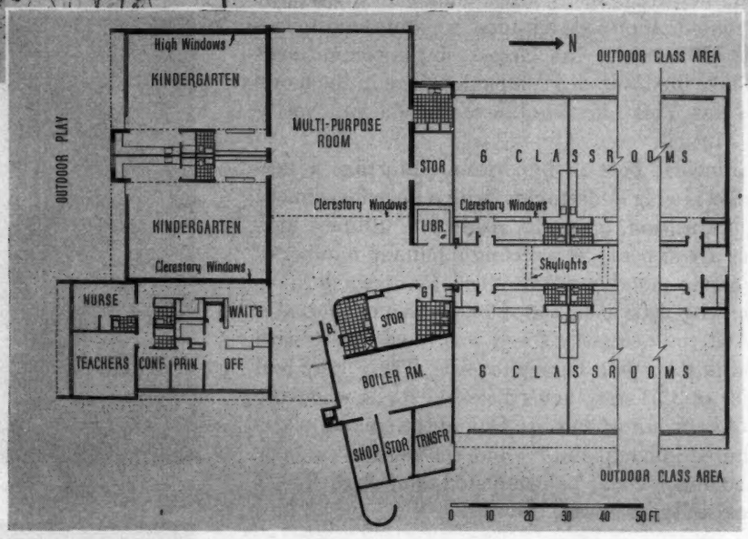




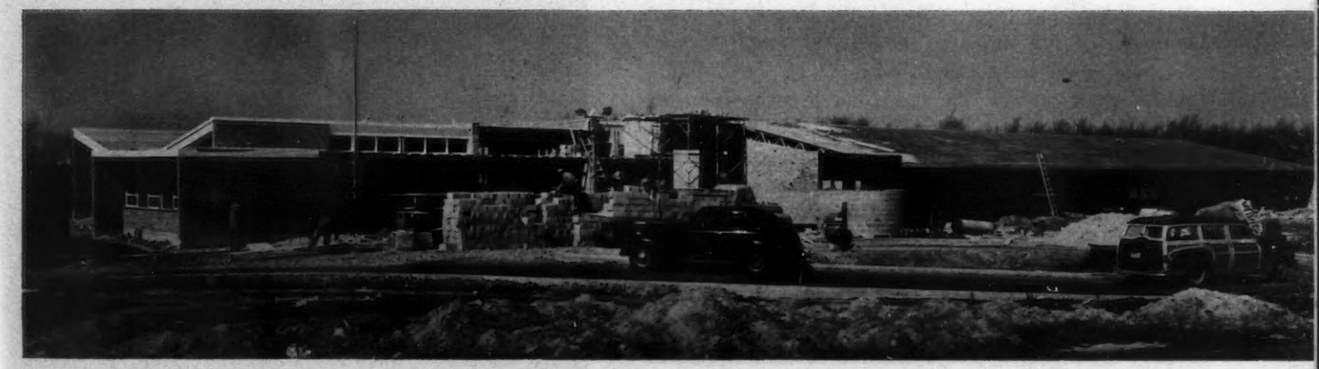


Just getting under way is the house-for-sale program at Park Forest. Houses are built directly by American Community Builders. One floor plan is repeated many times, with variations in exterior detailing. Carl J. Kastrup was architect for most

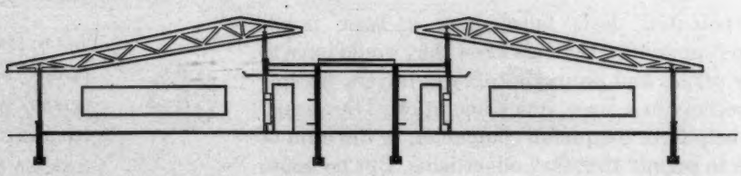




The first Park Forest school is now under construction. School is built by American Community Builders, for lease to the school board until such time as the board is properly organized and gains its bonding power. Then it will be taken over by the board for normal ownership. School was designed by Loebl, Schlossman & Bennett, architects



Hedrich-Blessing Studio Photos



quickest way to get Park Forest into being and give it identity. Three thousand families, coming in quickly, would permit a sizeable start on the shopping center, would bring quick income to get schools, churches and so on started. Only now are the houses for sale really in volume production.

There was some careful figuring in the determination of the figure of 3000 rental units. This number seemed to assert itself strongly, coming largely from the requirements for utilities — the initial installation was of necessity so large that no lesser number of units would be feasible.

Then it was necessary to do some selling to arrange financing for so large a group. Once the initial shock was absorbed, however, there was no difficulty, and the FHA granted approval on nine separate mortgages totalling $27,600,000, the largest single commitment made. Three life insurance companies share in the mortgages — New York Life, Sun Life of Canada, and Northwestern Mutual.

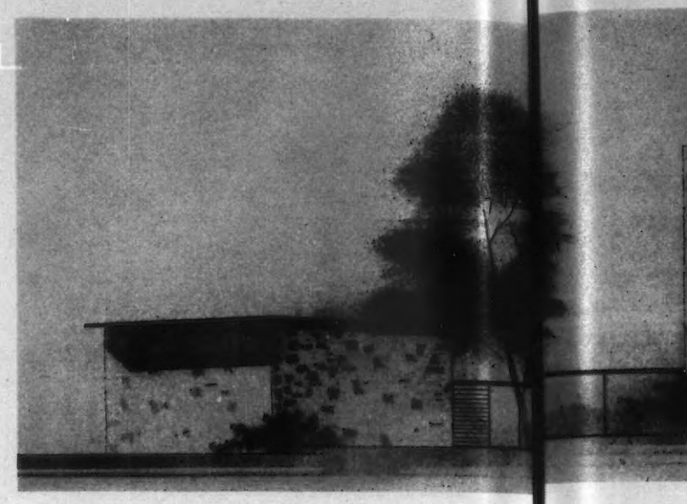
The principal here is important — starting a new community is a big undertaking, with a huge investment in land acquisition, planning, roadways, utilities, etc., and these investments fix a certain minimum number of units to assure sound operation. Park Forest might have got along with 2000 at first, but 3000 was a much better figure. And the necessary speed was much easier with rental units than with houses for sale. There were real difficulties at the start nevertheless — for a while the symbol of Park Forest was MUD, and the operation was almost mired in complaints — but the tenants came as fast as buildings could be completed, and Park Forest was successfully launched.

Prefabs in Park Forest

Park Forest has been probably the largest potential customer for prefabricated houses, although almost none have been built there. With all of the building troubles after the war, there was much enthusiasm for prefabs. It seemed quite logical, for prefabs might help get many families in quickly, solve construction difficulties, save time, and help in that perennial problem of the lag between investment and recovery of funds.

At one time Park Forest placed an order for 2000 Lustron houses, but none were ever delivered; for Lustron's difficulties caught up with them just at that time. Virtually every other prefab offering has been carefully investigated, and a few houses are included in the test group now. But no large contract was actually placed.

Most potential deals failed over a basic point. American Community Builders knew they would have to do heavy selling and promotion to win buyers' acceptance, especially in a large, quick operation. They asked for sales help from the prefab companies, in the form of discounts to permit necessary advertising. But no house

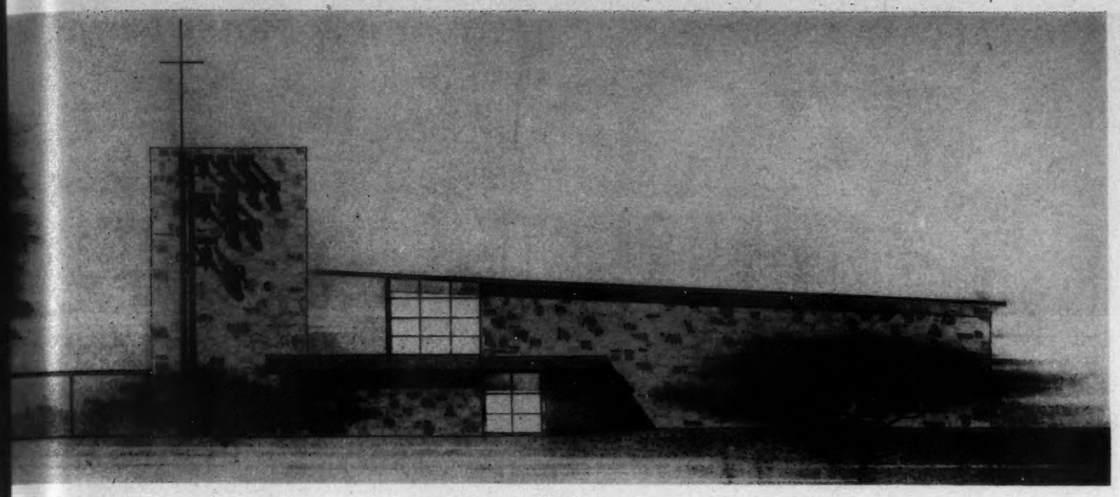


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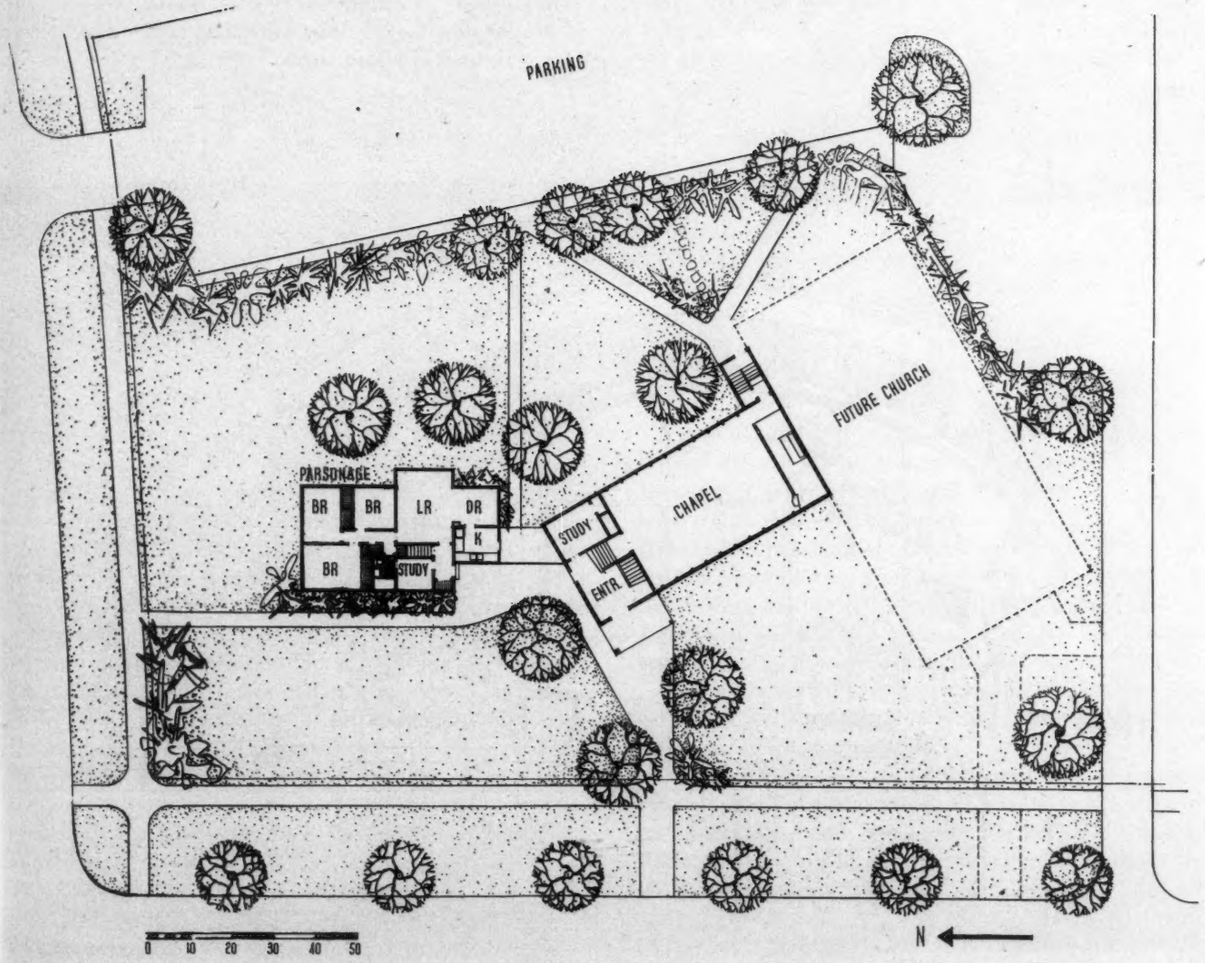


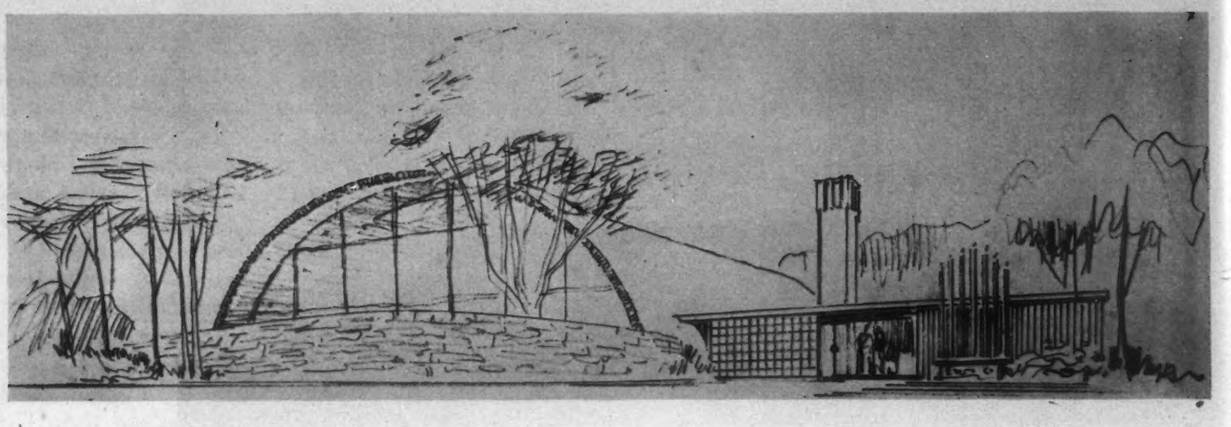


Trinity Lutheran Church was the first built in Park Forest; Loebl, Schlossman & Bennett, architects. It is really the chapel section of the full project, to be completed when the congregation grows. Full plan is shown on opposite page, including parsonage



Design for the United Church, Park Forest;
Schweikher and Elting, architects





maker could then agree to grant this "trade discount," even for the mass selling operation that was involved. So Park Forest is building its own houses.

Houses for Sale

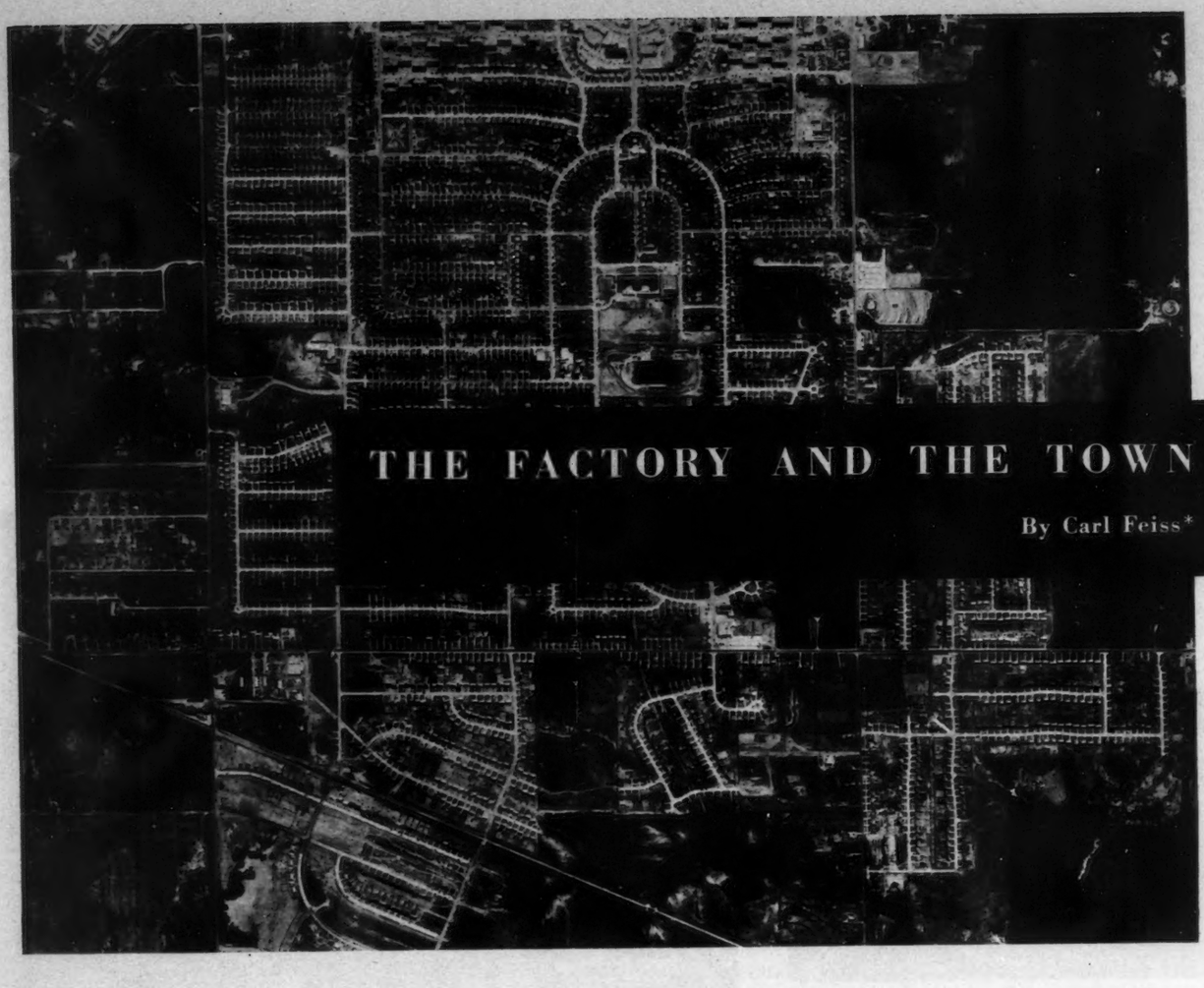
The houses-for-sale program finally did not get into actual construction until last fall, when work began on 525 two-bedroom "ranch" houses, with masonry walls and radiant heat. The first 100 were completed about April 1, 1951.

The next 300 houses, it is expected, may still be prefabs, with three bedrooms. Then will follow 800 more, conventional or prefab depending on public acceptance and demand. For next year it is contemplated to go into different types and sizes of houses, although Park Forest will probably remain a small-house development.

It is a source of considerable satisfaction to Mr. Klutznick that of the first 100 houses sold, 35 went to tenants in Park Forest. And, he adds with a grin, they are already forming a home-owners' association. "Maybe now there will be somebody organizing to save taxes instead of spend them."

Proposed synagogue for Park Forest; Loebl, Schlossman & Bennett, architects and engineers





THE FACTORY AND THE TOWN

By Carl Feiss*

Midwest City, Oklahoma; William P. Atkinson, Builder; Seward Mott, Land Planner

JOHN COOLIDGE, in his remarkable study ** of the founding and development of Lowell, Massachusetts, speaks of the vision of this manufacturing town conceived as an ideal community by that conservative and hard-headed industrialist, Francis Cabot Lowell, in the year of our Lord 1814. Mr. Coolidge says, "The founders of Lowell certainly expected a city to grow up around their factories. They were resolved that it should be an ideal city. But they failed to appreciate the important part which planning and real estate management would play in the layout and gradual evolution of the perfect town. . . . Planning has nothing to do with its quality, for planning was not recognized as a controlling activity. . . . Still less did they feel any responsibility to mold the form that the community assumed as it developed."

There would be little gained if I were to attempt to review the history of American industrialization here. However, I want to emphasize that our historic industrial tradition during the pioneer, Colonial, and early Republican periods contains much evidence that our industrial forefathers were interested in the social and physical environments of plant location. For the complete story of what happened to our cities as the industrialization of the country took place during the 19th and first half of the 20th Century, I refer to Lewis Mumford's comprehensive chapters on the subject in "The Culture of Cities." †

Ebenezer Howard,†† the inventor of the Garden City idea and progenitor of the British New Town program (See ARCHITECTURAL RECORD for December, 1950), and his successors, including many modern philosophers of

** This article was prepared by Mr. Feiss in his private capacity as a professional city planner and does not necessarily reflect the opinions or policies of the Housing and Home Finance Agency, of which he is an official.*

*** "Mill and Mansion," John Coolidge, Columbia University Press, 1942.*

† "The Culture of Cities," Lewis Mumford, Harcourt Brace, 1938.

†† "Garden Cities of Tomorrow," Ebenezer Howard, Preface F. J. Osborn, Introduction, Lewis Mumford, Faber and Faber, 1946, (New Edition from 1898 first printing).

urban life, rather seem to have failed in two things:

1. To face squarely the solution of the planning problems of the old, central city.

2. To provide convincing proof that the replanning and rebuilding of old cities and the planning of new ones would benefit the American industrialist and businessman.

Now I am not certain that it is ever the role of the philosopher to do more than point the way for others to follow. Howard succeeded in getting two Garden Cities built in England during his lifetime, Letchworth and Welwyn; influenced the work of John Nolen at Kingsport, Tennessee in 1915; the development of the Greenbelt Towns by the Suburban Resettlement Administration in 1936; and such towns recently constructed in the United States as Park Forest, Levittown, and Midwest City. Of the American towns, only Kingsport has an industrial base and Park Forest an area for industrial use still to be developed. The Garden Cities and New Towns of England have as a fundamental purpose the idea that industrial advantage will result from industrial dispersal from central cities. A sufficient number of imaginative industrialists were found to prove the point conclusively at Letchworth, Welwyn, and Kingsport. Howard's philosophy turned out to be practical and attractive to a few investors. The Garden City idea, based on three good experiments, has panned out in actuality.

But Geddes' and Mumford's "Insensate Industrial Town" still grows more and more insensate. Even the actuality of war in Europe and the threat of war here make little impression on the increasing congestion, squalor, and inefficiency of our huge industrial complexes. It should be apparent to even the dullest intellect that the value of the assembly line indoors is canceled out by the lack of environmental efficiency outside the plant. Neither the mechanical nor social environment of our dirty, smoky, and noisy Clevelands and Birmingham and Los Angeles lend themselves to the advantage of our much vaunted American business sense. By this time that old saw "Smoke means success" is pretty much dulled by the soot.

Below: slums are not entirely due to poor planning, but what about this?



Acme Photo

Kingsport, Tenn., a bold industrial town planned in 1915 by John Nolen



McNeer-Sprinkle Photo

Industry in a Vacuum

Our cities congest and sprawl to the detriment of all of us. It is hoped that a new awareness can be developed through every educational means to promote a planned cooperative policy subscribed to by industry and the community with which it is associated, or the larger areas or regions containing the employment pool from which industry must draw its workers. The time has come for us to realize that an industry does not stop at the fence but is dependent on the organization of the

community, the community's ability to attract and retain workers, and its ability to provide the necessary housing facilities and services demanded not only by the taxpaying industry itself but also by the taxpaying worker for that industry. American business has never been and never can be conducted in a vacuum. Business and industry in the modern world are the production units housed in skyscraper and factory, in the city hall, the home, the store, the school, and the park. Only these factors together constitute a productive unit. Only by planning together can we create a truly livable and efficient country and society.

There are three discernible trends in industrial development today which will affect city planning and the housing industry. They can be roughly designated as:

1. The Isolated Unit System
2. The Planned Industrial District System
3. The Decentralization System

While the study of trends in industrial planning *per se* is not the subject of this article, it is important to recognize that trends in the development of industrial housing are to a large extent controlled by these three systems. The architect and engineer interested in both industrial development and housing must be able to determine the relationships between trends in plant location and the availability and desirable character of housing for industrial workers. In the scatter pattern of industry normal to most cities, and identified with System No. 1, industrial housing (too often slum housing) also is part of this scatter pattern. In the Planned Industrial District System (No. 2), such districts seldom include industrial housing as part of the plan, and in No. 3, the Decentralization System, including both the growth of industry in the urban periphery and into small town or dispersed locations, again we find a habitual lack of interest in worker's housing on the part of industry and the technician responsible for industrial plant planning.

The most important reasons for a decentralization policy of an industry in 1948 were market expansion, new labor, certain efficiencies in small plants, functional segregation of operations, and the advantages of small city and town location with attendant improvement of human and public relations. While the last named items are important, the record of purely "company towns" has not always been too happy. This is brought out sharply in the 1947 report of the Coal Mines Administration, "A Medical Survey of the Bituminous-Coal Industry," better known as "Admiral Boone's Report." The coal industry, of course, has always been dispersed. Labor history in isolated industry of many types in rural villages in many parts of the country has been unfortunate, and the development of the rural non-farm slum is one of the large-scale problems we are facing today. Based on past experience, experts in the field of public administration should work with industrial management in the invention of the provisions and safeguards which will assure that industrial decentralization of the future will not only benefit industry, but also the community in which industry is located or the community created by industry.

Decentralization takes on a new meaning in 1951. While it is too early to define clearly the impact of the present defense effort on industrial movement, the need for industrial housing appears to be growing in many small towns. The ARCHITECTURAL RECORD editorial for December 1950, "City Planning and Civil Defense," stated, "Every slum clearance project, housing development, industrial plant, traffic artery or other public improvement should be planned with a view to the military as well as the civil aspects of dispersal." This places an obligation on the architect which he must not shirk. He must come to the realization that in many instances he has a selling job to do to convince the industry building a decentralized plant (for defense production or protection or for any other reason), that the plant is not and cannot be complete without adequate workers' housing and community facilities and services.

Because of some unhappy experiences with plant managed communities during the last war and the "company housing" history mentioned above, many industries today are inclined to let nature take its course and are avoiding the issue — in fact completely leaning over backward to do so. While it is true that the Willow Runs of World War II were discouraging experiences, the problem is not solved by avoiding the issue. The fullest possible concentrated attack is needed with industry, local government, and the federal government, using the architect, engineer, and town planner in a joint endeavor to avoid past mistakes being repeated over and over again. We have the technical know-how if we can put it to work.

For instance, and this is one of several recent examples, a small rural town in the East with a population of 6500 is about to receive the impact of two industrial developments whose workers alone (not including their families) may more than double the existing population. The industries also have a wide range in employment types. There are no extra rooms in the town, let alone houses, one little hotel, a small shopping center at the crossroads, a couple of old and crowded schools, inadequate water, one small sewage disposal plant, only one paved street, little power, or anything else. Bulldozers are already clearing the land, and real estate speculation is growing in the vicinity. Nature's course is an obvious one since neither the new industries nor the city council can solve the problem as part of a planned development. We can expect the impact here to be destructive in the same way it was in so many areas in and around our cities during the last war. Shack towns, trailer slums, and the usual mixed land uses due to lack of a master plan, zoning, building codes. Even municipal bankruptcy may occur as the debt charges mount in an effort to meet the service needs of the increased population.

The tragedy is not only the resultant waste but also the fact that we are ignoring our own well established technical and managerial capacities. Leadership in the

developmental sciences of community building must come from the planners, architects and engineers involved in each specific development. While we hammer this point over and over again, we seldom drive it home. I am sure that in the industrial development for this small town are to be found the men who could do the comprehensive program so badly needed.

To add to the gloom of this picture we must recognize that the defense worker today is a highly mobile individual. He migrates easily. The last war proved that. Where housing, shopping, schools, and health conditions are unsatisfactory, even though salaries may be high, the worker thinks nothing of pulling up stakes at a moment's notice and the whole family, dragging a loaded trailer behind an expensive car (which can be more easily acquired than a good house), goes off to a rival area where there is also a labor demand and where it is hoped that there will be found better living conditions. There is or will be developing in many areas a most encouraging competition for labor in which high salary and good working conditions are not the only inducements. It is my hope that architects and engineers will begin to recognize the character of such inducements and their importance not only to successful plant expansion but also to the furthering of the defense effort.

Industrial Housing

There has been and will continue to be much discussion of industrial housing. Housing built by an industry for its workers — company housing — is one clear-cut example of industrial housing. Beyond this it is hard to distinguish industrial housing from any other worker's dwelling, industrial or otherwise. General proximity to an industrial area may be an identification but there is no real importance to the term *except in the identification of deficiencies* in the housing supply. These deficiencies would indicate a scarcity of housing at a cost or rent commensurate with a worker's income, of a desirable standard of design and construction, and in a location suitable for family life. Such standards as have been established by the Committee on the Hygiene of Housing of the American Public Health Association * are the desirable ones to be considered for any or all housing.

The importance of a housing program developed simultaneously with an industrial development plan was emphasized at the beginning of this paper. The wise community and the wise industry will prepare a complete market analysis for both before signing the final papers.

Industrial and Planning Cooperation

We have, to date, very little specific evidence on the relationships between industrial management and municipal management as far as cooperation in the physical planning sense is concerned. It is true that economic cooperation or assistance in the form of inducements to industry through tax exemption is common, and administrative and legal sanctions through the waiver of zoning restrictions are also common. But we are just now beginning to find in the average American city evidence that industry is becoming aware of its responsibilities in the preservation of amenity or in adding to the livability of the community. In Pittsburgh, St. Louis and Los Angeles real attempts have been made to control smoke and fumes, with industry and the community working in close harmony. For all the wealth created by industry, much of which may have been added to the collections of museums or the coffers of universities and hospitals, the smog still lays its pall over most blackened cities and industry wallows in the sludge of the valleys; the Cuyahoga, the Mahoning, the Monongahela. And descending into the valley are the rows of sordid tenements, waiting for someone to do something about them. To me the great federally assisted Geneva Mill at Provo, Utah, is a presage of what can be done — clean, well designed, free standing against the Wasatch Range — good housing near by, good transportation, all the factors that make industry rightfully proud and us proud of industry.

The spread of slum and blight in our industrial cities has been due in large measure to the lack of guidance and to the lack of the assumption by local government of responsibilities for the protection of the interests of both the inhabitants of the community and industry. The resultant decay which has occurred in almost every one of our industrial centers, while due in part to plant obsolescence and new technological findings which are improving production and management, is also due to location factors. These adverse environmental considerations may have been in existence at the time of the original location of the plant, or they may have occurred through the years through the development of mixed uses in the vicinity of the plant, or they may have been created by the plant itself.

At the very beginning of this article I quoted from John Coolidge's study of the development of Lowell and the objectives of the founders of that city. Planning as a controlling or guiding activity is still not recognized, nor is the importance which it may play in preventing the deterioration of an industrial locality.

Whatever the circumstances causing deterioration and blight, it is becoming necessary for local government to prepare master or general plans for land use. These plans have as the objective not necessarily the creation of an "ideal" community but certainly the correction of existing problems and the improvement of the locality as a whole. The courage and imagination of our industrialists who have had considerable responsibility for the incomparable economic and social structure which we enjoy have not been sufficiently directed towards the creation of the additional physical improvements needed to complete the picture. Therefore, it is important that the function of a city planning commission is clearly understood by all citizens. With some of

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* *An Appraisal Method for Measuring the Quality of Housing. Part III. Appraisal of Environment. Also, "Planning the Neighborhood," American Public Health Association, Committee on the Hygiene of Housing, Public Administration Service, 1948.*

this in mind, the U. S. Chamber of Commerce's Sub-Committee on City Planning is preparing a manual to be completed by the end of 1951, to advise businessmen throughout the country as to the importance of planning and the relationships that should be developed between business, industry and a local planning program. It should be emphasized here that good community planning is good business, and it is my firm belief that great savings in land value and taxation will result from good community planning, quite apart from the benefits to the citizens from such a program.

of old towns into new towns — just as new and efficient and permanent and desirable as the new towns in rural areas which Great Britain is so diligently building or which we may build here.

It is much harder to make old towns into new towns than to start afresh in a cow pasture. But the facts are that we have the old towns to deal with and we can't scrap them. The standards for the design of the new-old town remain the same as for the new-new town. The solution will be different. If there were any slogan I could devise for the defense period, it would be, "New



Squire Haskins Photo

Below: Geneva Steel Plant, Provo, Utah, with housing back near mountains, an example of sound planning



Left: Trinity Industrial District, Dallas, Tex., a fairly recent example of planned industrial subdivisions

But for the purpose of this article I have little new to show you. We are making progress in residential area and commercial area planning. We have yet to get started on industrial planning and redevelopment and the correct correlations with residential and other areas. There is a great future in it for architect, engineer, worker and industrialist.

Industries and New Towns

Whether industry moves because of strategic or other decentralization purposes or remains where it is, new towns are in order. The correction of past errors in the design and construction of our old cities and in the location of our industries in them, entails the reconstruction

Towns for America — The American Way of Life is our Best Defense." And then, as an objective, assume that every architect, builder, industrial realtor, town planner, and the rest — every man with any responsibility for the physical development of our communities, whoever he may be — takes this responsibility as part of his contribution to the defense effort: to see that every substandard living unit and neighborhood is eliminated in his own community. In so doing he will create new towns out of the old and a decent and sound environment for both our people and our industry. In so doing he will have assisted in the establishment of an American Way of Life which will be unassailable. In so doing we will all of us have won a world wide victory.

LOW-RENT HOUSING, MASSACHUSETTS: I

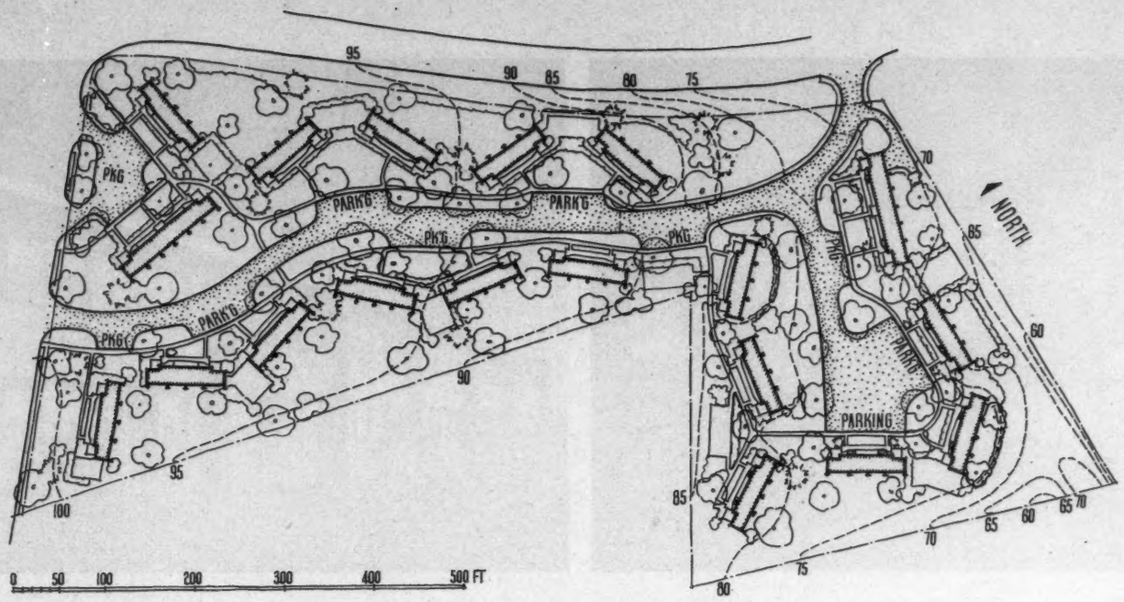




HAMPSHIRE HEIGHTS

NORTHAMPTON

MASSACHUSETTS



James A. Britton, Architect

Jo Ray, Site Planner

Daniel T. McCarthy, Mechanical Engineer

Joseph W. Molitor Photos



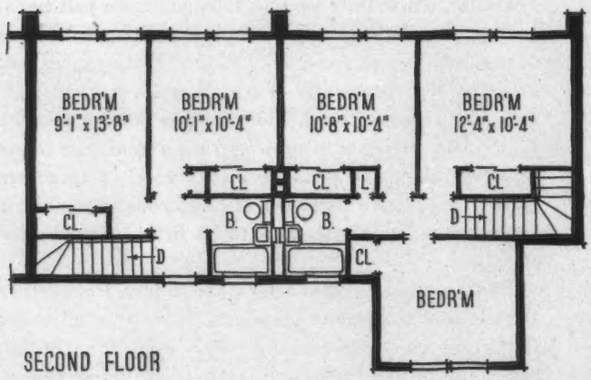
VETERANS' HOUSING, of course, is not the industrial or military housing which the present mobilization for production will entail; but it is group housing; it is, in the aggregate, a pretty apropos demonstration of the effects of minimum standards; and (though the examples shown here are fortunately well above average) the norm has too often been sterile as well as sanitary and "decent". Now that we can look back we can begin to realize the depressingly monotonous characterlessness of much housing done during the succeeding emergencies of depression years and World War II. And just as we get pretty discouraged, along comes such a project as Hampshire Heights to show us that a modicum of architectural talent can produce pretty good architecture in spite of repetitive planning and rigorous economies and spatial standards so low as to be little more than substandard.

Examination of unit plans (next page) reveals that the architects adhered closely to these minimum space requirements. Bedrooms are barely adequate, but their size could not be increased; so there are fairly generous, well-disposed closet space and full basements (with laundries and individual furnaces) for all units. Living rooms are tiny, but there is wall space for furniture and all — and most bedrooms, too — open out to pleasant "rear" yards, away from street noises. The buildings are identical in plan, but they are disposed with studied haphazardness — and land coverage of only 10.64 per cent — over the sloping 9.61-acre site, taking full advantage of the distant view of two mountain ranges and the more intimate, informal perspectives which their own arrangement creates. They are vividly colorful, with red brick, white paint, warm natural wood and an occasional glimpse of hot, primary red on the hidden side of an entrance trellis. All this can be done with severely restricted veterans' housing. Let's see what we can produce for mobilization housing.

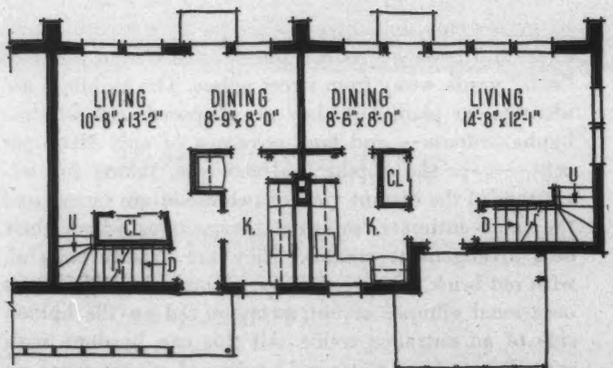




Above, left, brick and wood street facade of a 4-family building; right, corrugated asbestos-cement sheet and brick veneer on garden side of a 6-family unit. Below, right, another 4-family facade. Despite exact repetition of tight plans (below), site development and facade treatment, as well as use of brilliant color, give Hampshire Heights a pleasant aspect and help emphasize individuality. Each family has a full basement with laundry and hot air furnace



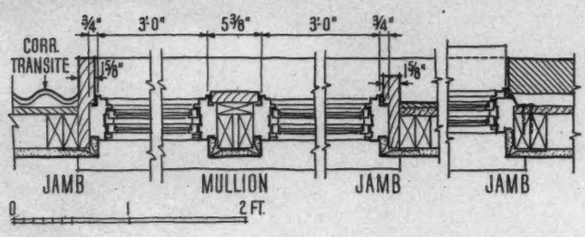
SECOND FLOOR

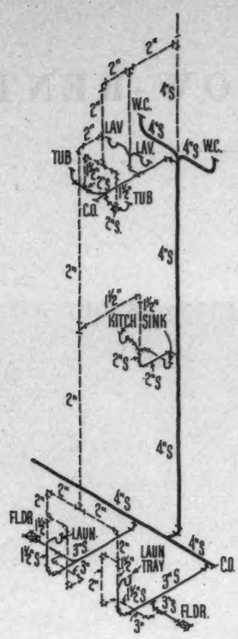


FIRST FLOOR

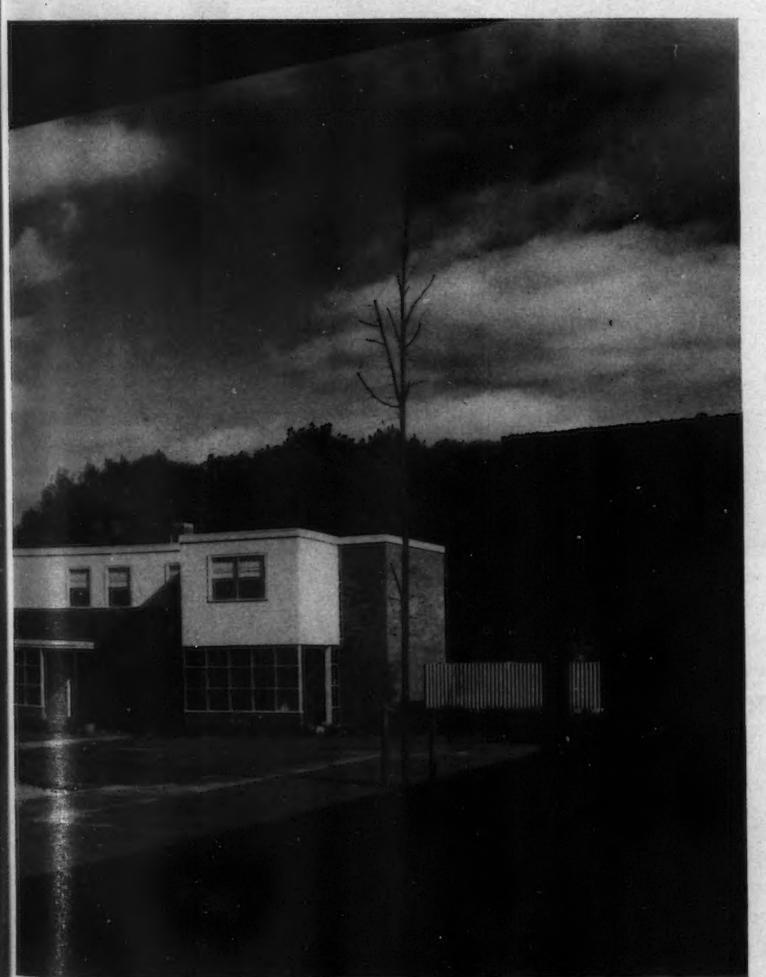


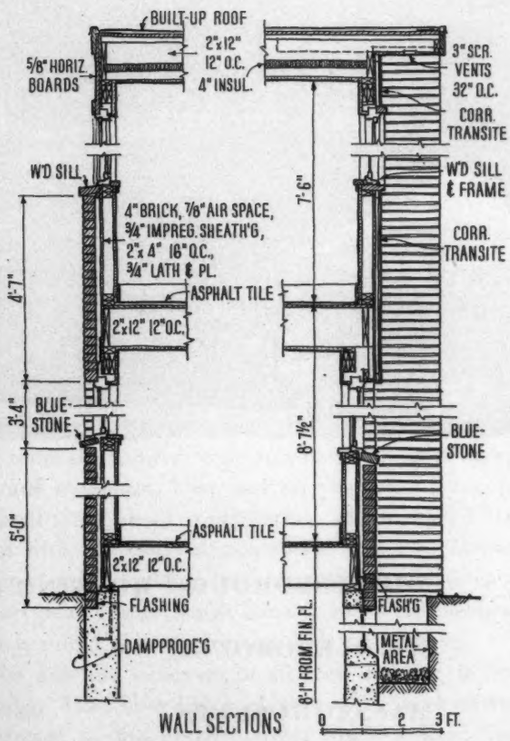
Economies in construction obtained by such planning devices as pairing kitchens and baths, one above the other, are demonstrated by the simple plumbing stack (right), repeated throughout. Equally economical are window details (below) and conventional wood construction (lower right). Including furnace, range, water heater, incinerator, laundry, and site development, per-family cost was $10,479





Joseph W. Molitor Photos





LOW-RENT HOUSING, MASSACHUSETTS: II

Joseph W. Molitor Photos

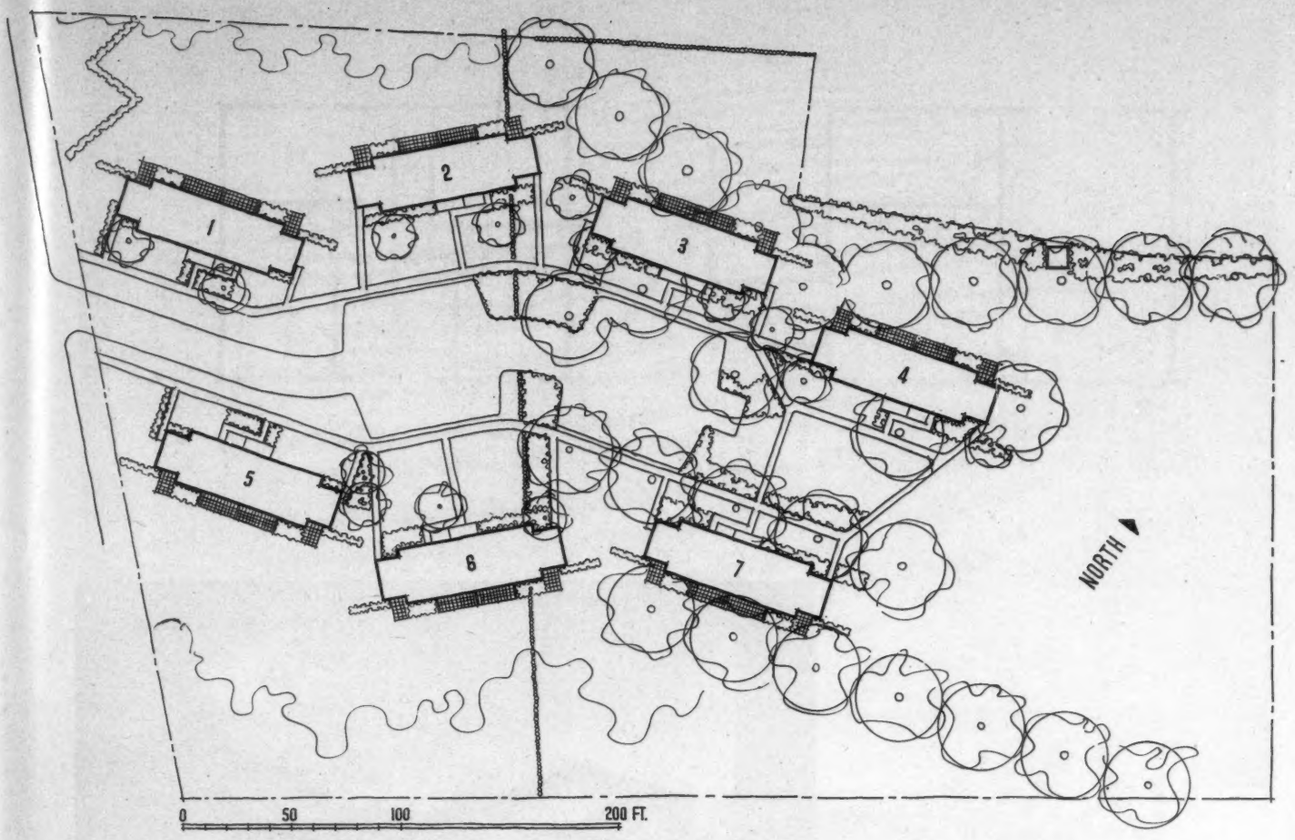




MIDDLEBOROUGH HOUSING PROJECT

MIDDLEBOROUGH

MASSACHUSETTS



Kennedy & Smith, Architects

Dan Kiley, Landscape Architect

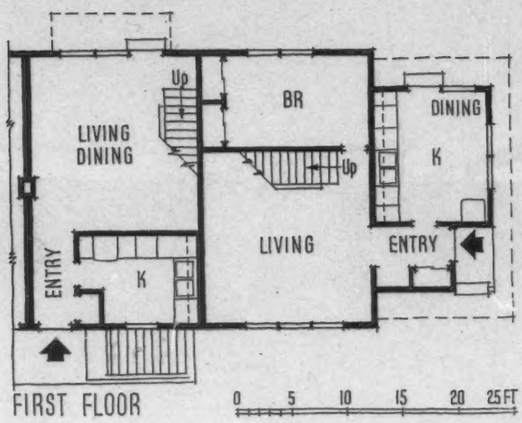
Gordon MacNeill, Engineer

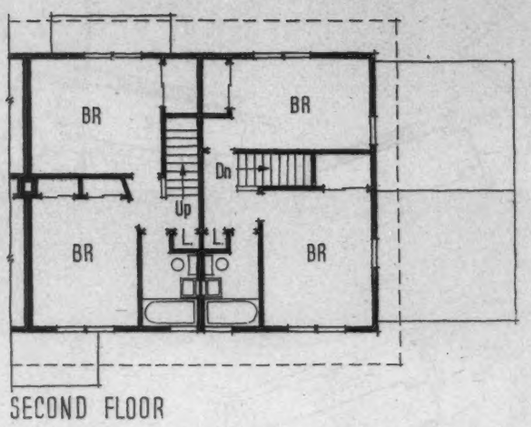


MIDDLEBOROUGH, again, is an example of what can be done to mitigate low housing standards. Let the architects speak:

"The unit plans of Middleborough," Kennedy says, "are far below what we could have done had it not been for the State Board of Housing's standards, and particularly for the way in which they interpreted them. Their room sizes and average unit sizes were both maximum and minimum. They had very conservative, conventional ideas about construction, and so forced the houses into the conventional mold. The two factors combined made building more expensive and less easy than necessary, even though this was one of the cheapest of the hundred or more projects done at the time.

"The greatest weakness in all mass housing is site planning. Middleborough's chief quality is sensitive adjustment to topography, trees, roads, colors. Too often site planning has to be a total regrading job, cutting down trees, changing run-off courses, etc., resulting in bare, shadeless, ugly sites and more cellars leaking than not."





Joseph W. Molitor Photos



Pleasantly site-planned—to help make up for unthinkingly rigid local interpretations of veterans' housing criteria—Middleborough's row houses have identical two- and three-bedroom units



Above, typical end-unit kitchen equipment. Basements are small, under central portion only of each building, and contain the boiler and hot water heater for the building





Official Photographs U. S. Air Force

AIR FORCE HOUSING, MOJAVE DESERT

Edwards Air Force Base, Muroc, Calif.

Hal B. Hayes & Associates, Designers & Builders

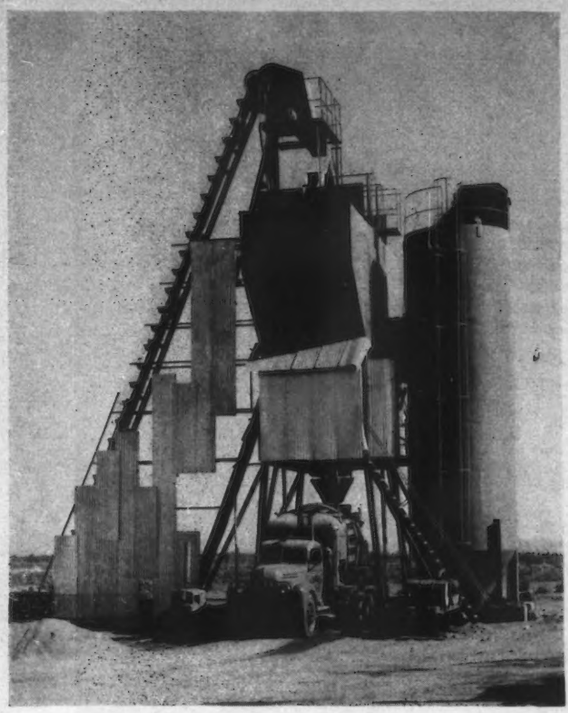
Maurice Fleishman, Architect

A. H. Benedict, Engineers

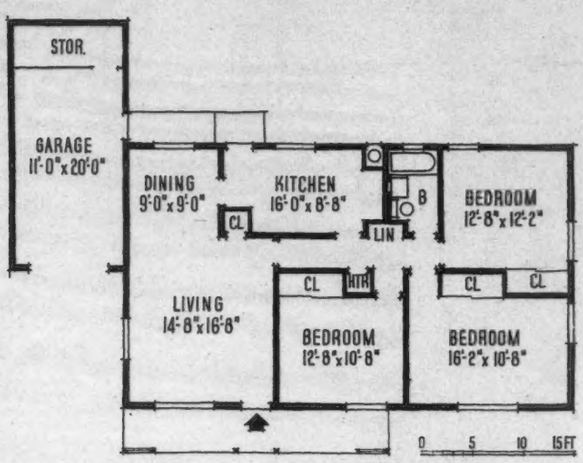
ONE OF THE FIRST PROJECTS under the new far reaching FHA Title VIII military housing program is being constructed to alleviate living conditions at the Edwards Air Force Base in the Mojave Desert. The site was originally developed as a test base to take advantage of the Muroc dry lake as a large, flat natural runway. Extreme living conditions, however, resulted in a serious morale problem. It was not until Congress passed the Title VIII housing law that much could be done about relieving the situation.

Because of the isolation of the base, practically all labor had to be imported. Speedy construction methods and a large combination of labor-saving devices were employed to help offset the added labor costs.

Wood frame construction, covered with fireproof materials, was selected as the most permanent building material for the desert, where excessive dehydration prevents fungus and decay. All houses are air conditioned, and have walls and windows specially insulated and sealed against dust or possible wartime use of poison gas, etc. The project comprises 724 dwellings, a good many of which have been completed. Five floor plan variations were used, each averaging 1115 sq ft of living space plus garage.



Typical unit plan (below) is one of five variations used in the project. Each is equipped with stove, refrigerator and air cooling system



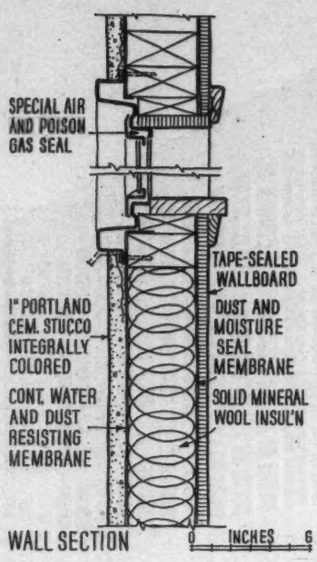


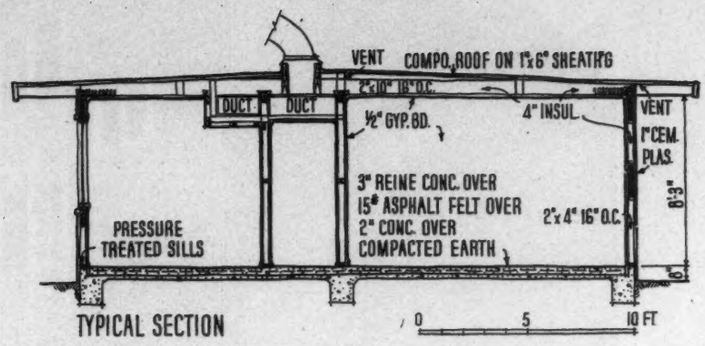




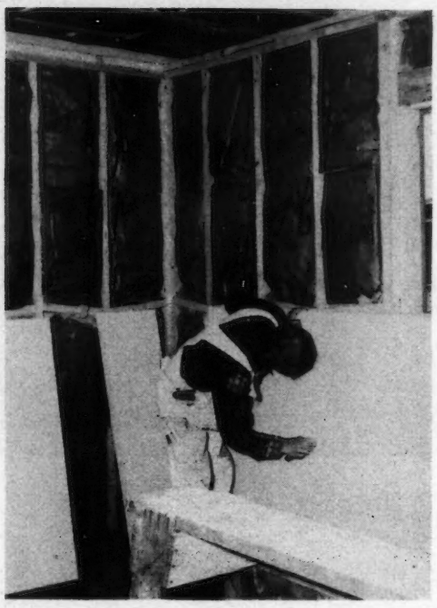


Labor saving devices were used where possible to speed construction. These included large volume concrete mixer (top left), cement placing and finishing devices (center), powered nail drivers (bottom)



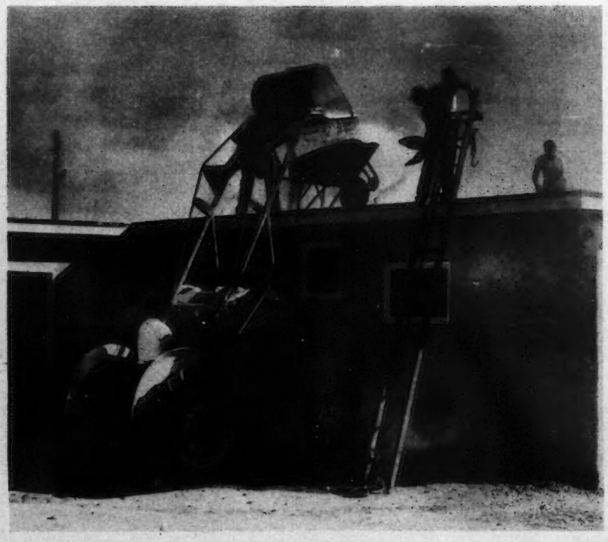


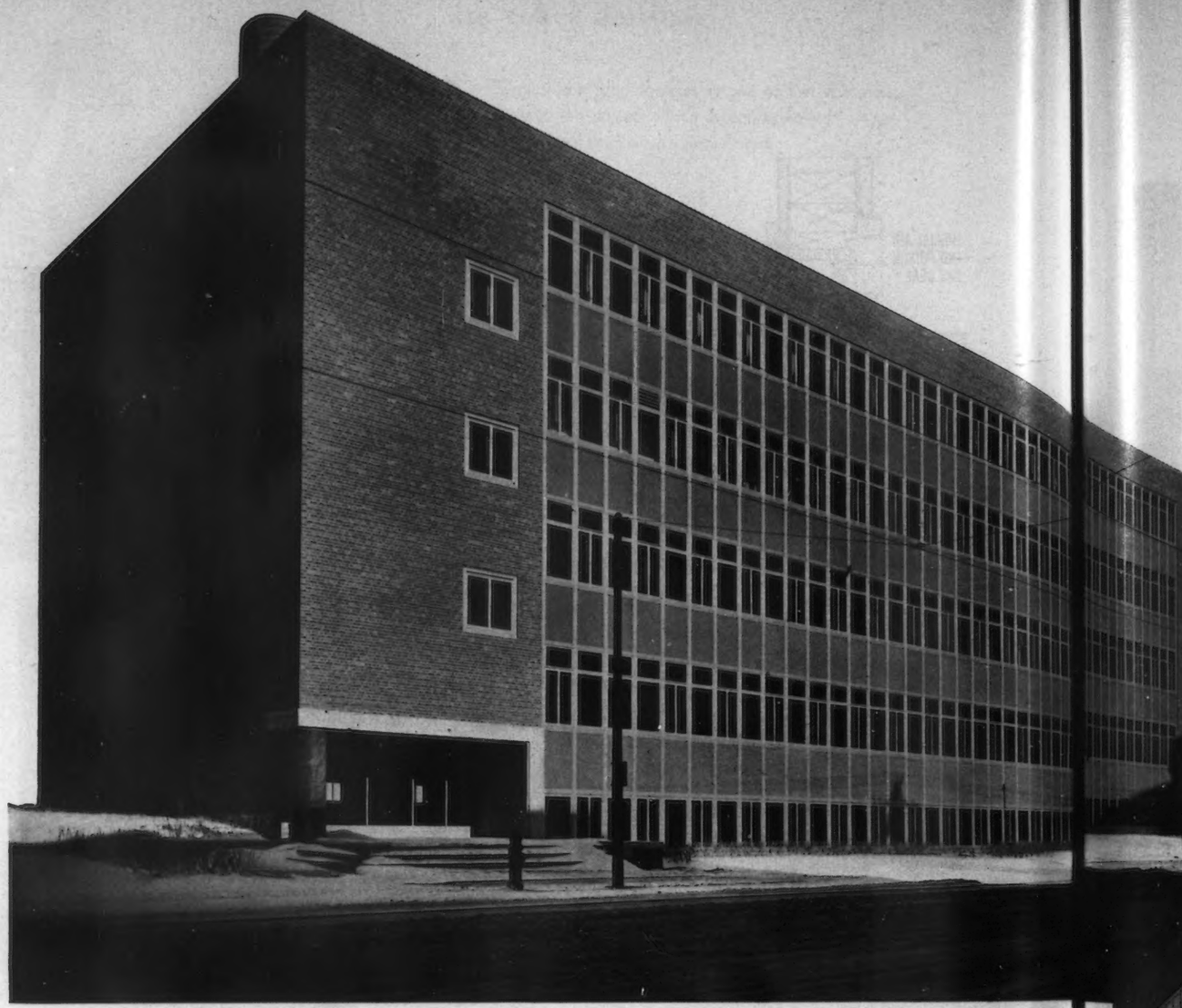
Official Photographs U. S. Air Force



The structures are specially insulated against dust (see sections above). Walls have protective membranes and insulation which are said to guard against radio-active dust, poison gas and products of germ warfare. Most of the windows are permanently sealed; mechanically filtered air is provided for ventilation. The few vented openings are fitted with self-sealing air stripping. Interior panels (right) are fire-resisting, applied with automatic taping and gluing devices. Mass construction methods were used throughout the project, as in photos (below) showing application of roofing







Warren Reynolds: Photography Inc.

CHEMICAL ENGINEERING BUILDING
UNIVERSITY OF MINNESOTA

Magney, Tusler & Setter,

Architects & Engineers

Roy Childs Jones

Advisory Architect

University of Minnesota

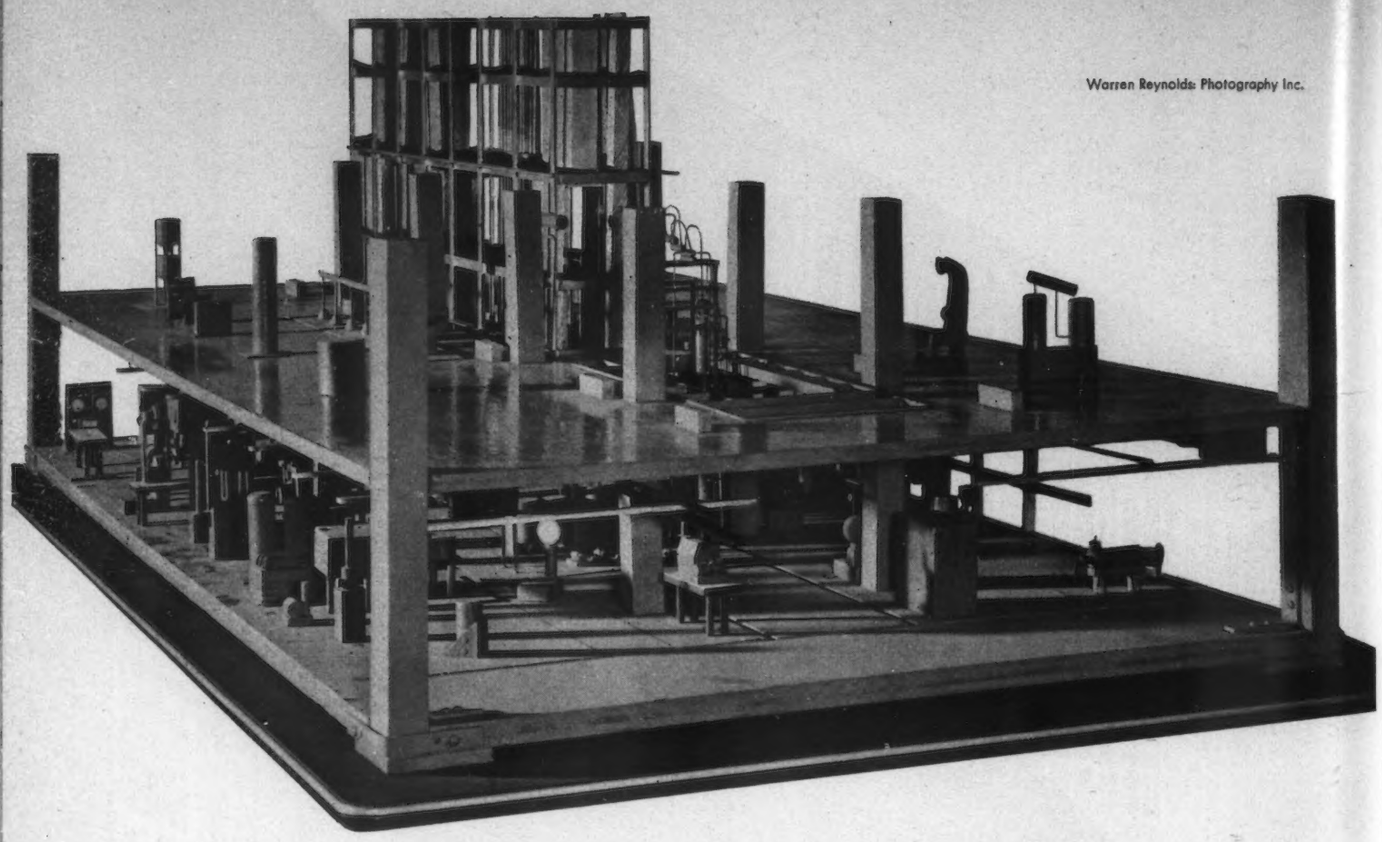
FLEXIBILITY AND SAFETY were the controlling factors in the design of this new building at the University of Minnesota. The flexibility was achieved by modular planning; the safety, by laboratory placement, ventilation, flash-proof partitions.

The entire building is designed on the modular principle. The window pattern gives external evidence: mullions between windows are centered on module lines, 3 ft 8 in. center to center. The same dimension serves as the module unit throughout the building. Interior partitions, overhead suspension hangers and in-wall tension strips for apparatus suspensions or installations are all spaced accordingly. All piping is in manifold systems,



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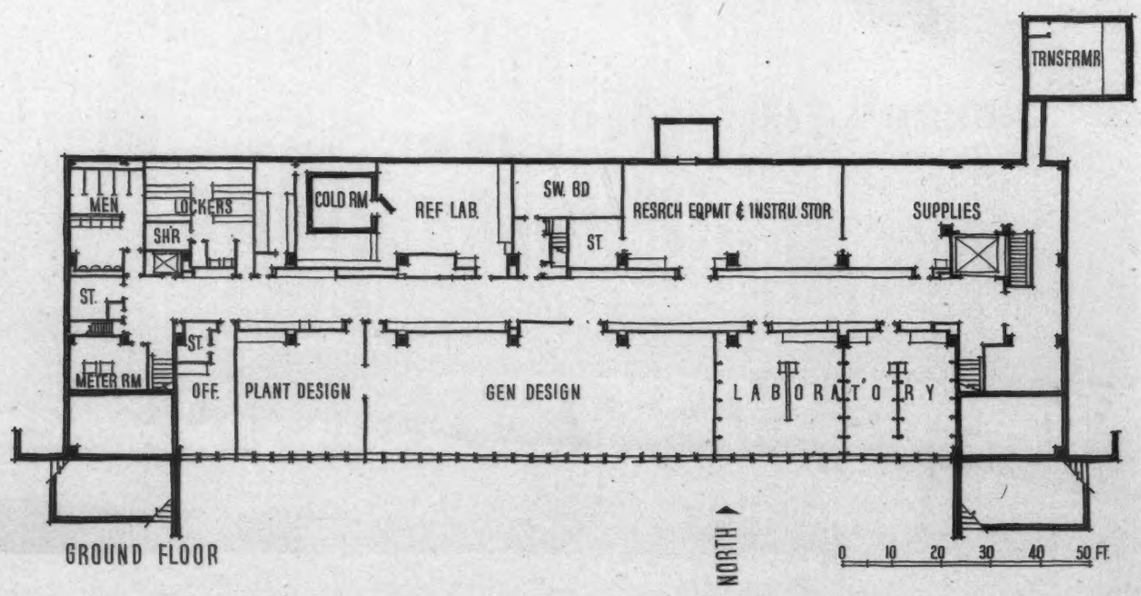
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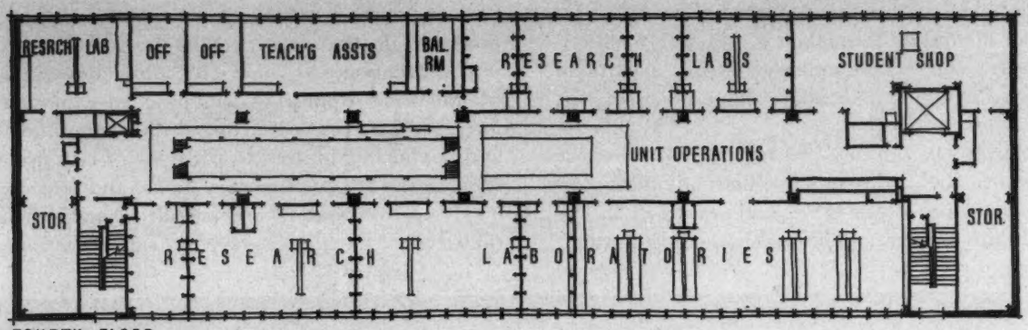


Warren Reynolds Photography Inc.

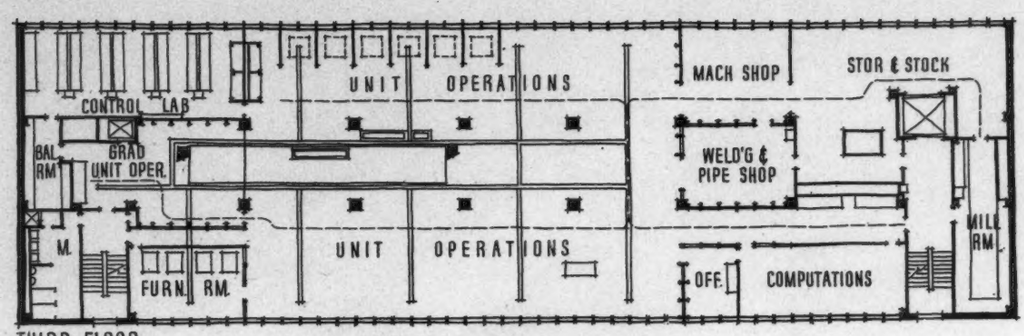
with branch plug openings spaced every fourth module (14 ft 8 in.); this permits complete flexibility in laboratory area installations with ready access to water, steam, gas, air and other supply lines provided at the recurring intervals. All structural weight is carried on concrete columns and steel mullions in the exterior walls, with all interior partitions non-load-bearing and easily removed or rearranged to meet space requirements. The entire structure could be quickly and economically converted to research work in the event of an emergency.

The building is designed around a "unit operations core" (model above), a utility core extending from the third-floor unit operations laboratory up to the top of the penthouse. This core includes provision for the installation of barometric legs and steam ejector legs from the penthouse to the sump drain at the ground floor. Accessibility of the utility core makes it possible to change the legs easily for various experimental purposes. (This would not be done normally in a chemical plant, but enables the laboratory to duplicate a variety of conditions that might be encountered in the industry.) All piping and ducts are so installed that they can be

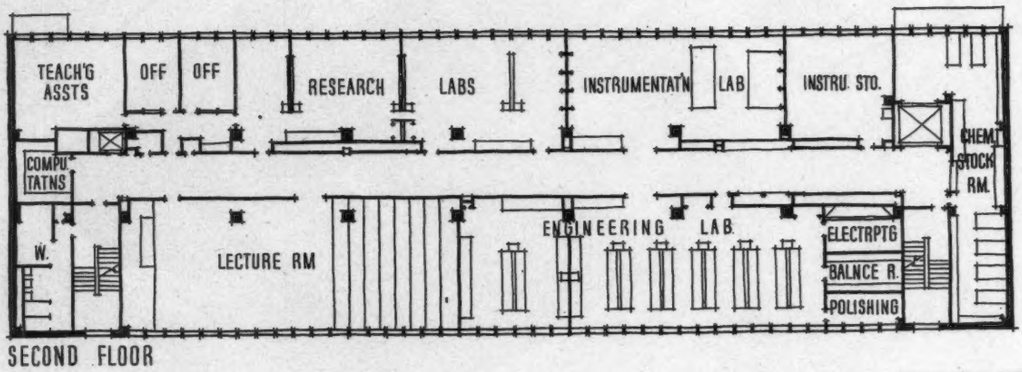




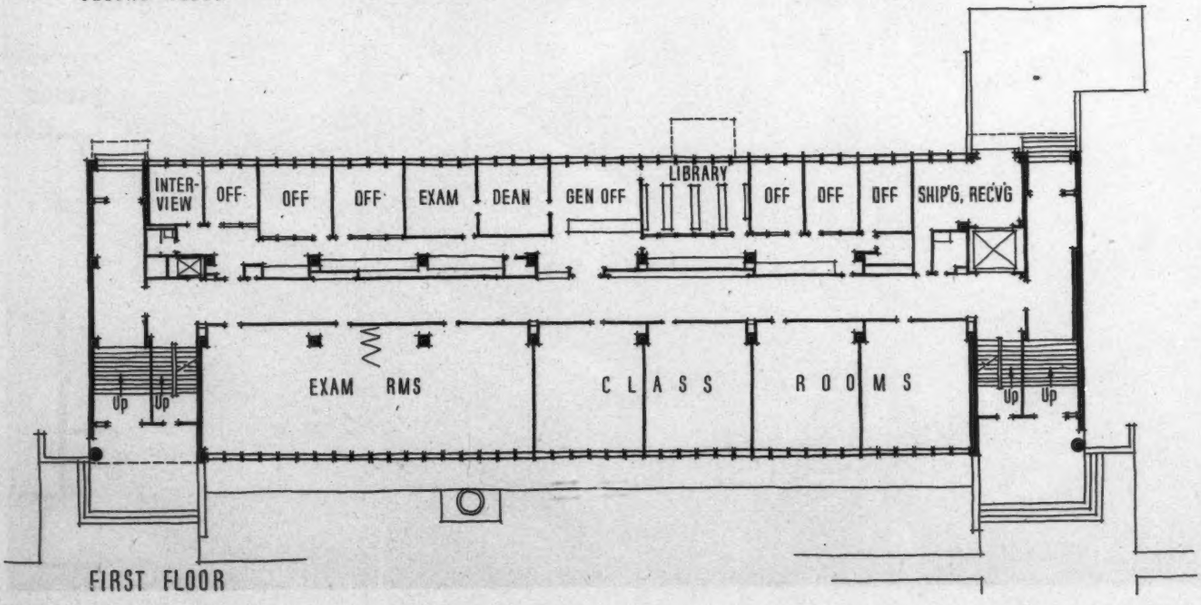
FOURTH FLOOR



THIRD FLOOR



SECOND FLOOR

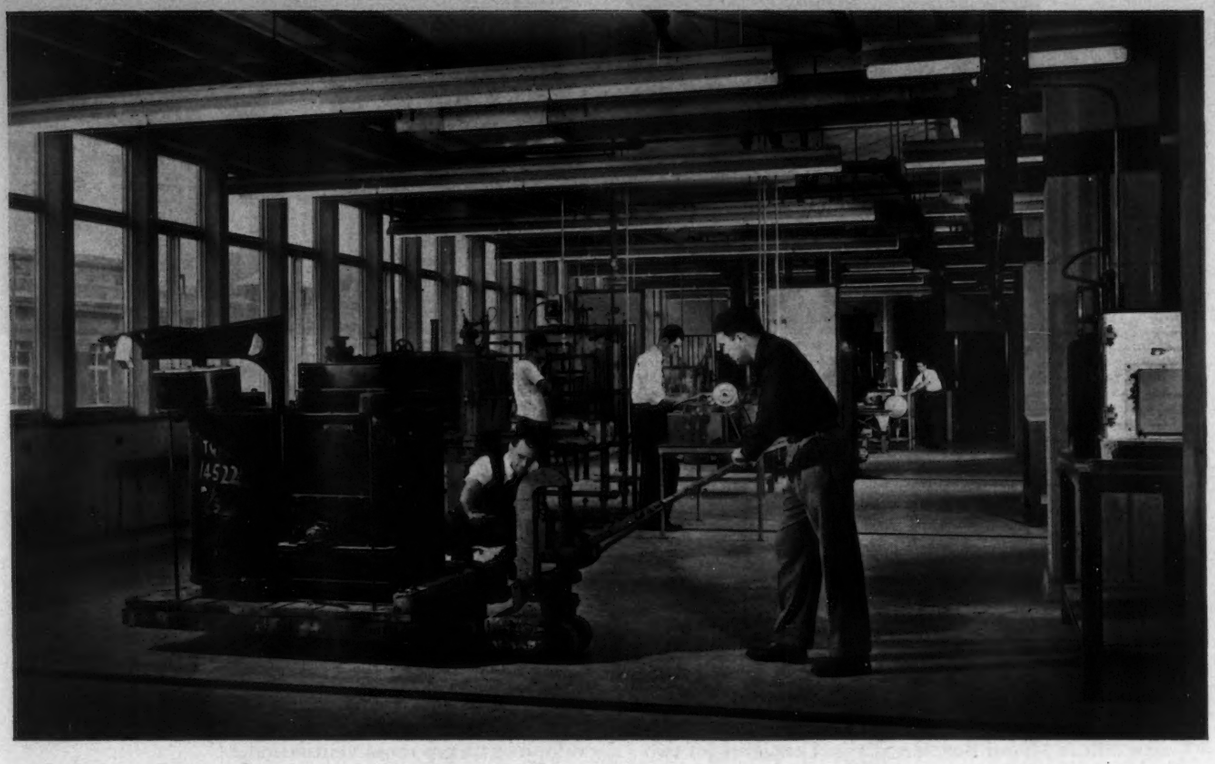


FIRST FLOOR

removed or augmented without structural change. Piping is color-identified throughout, and left exposed. Heating is by continuous radiation strips; partitions may be placed at any module line without any change in the installation.

Experimental laboratories are on the top floor, a location which the architects consider advantageous from the standpoint of safety — in the event of an explosion only the top floors would suffer; such laboratory placement also simplifies traffic problems, since undergraduate classrooms are on the lower floors. Both natural ventilation and "blow-out" protection are supplied by the wide expanse of windows; an explosion would force the glass outward, preventing structural damage and minimizing injuries to personnel. Flash-proof partitions separate the laboratory areas, and forced exhaust hood-type ventilators are installed above each partitioned area. Each laboratory has safety showers.

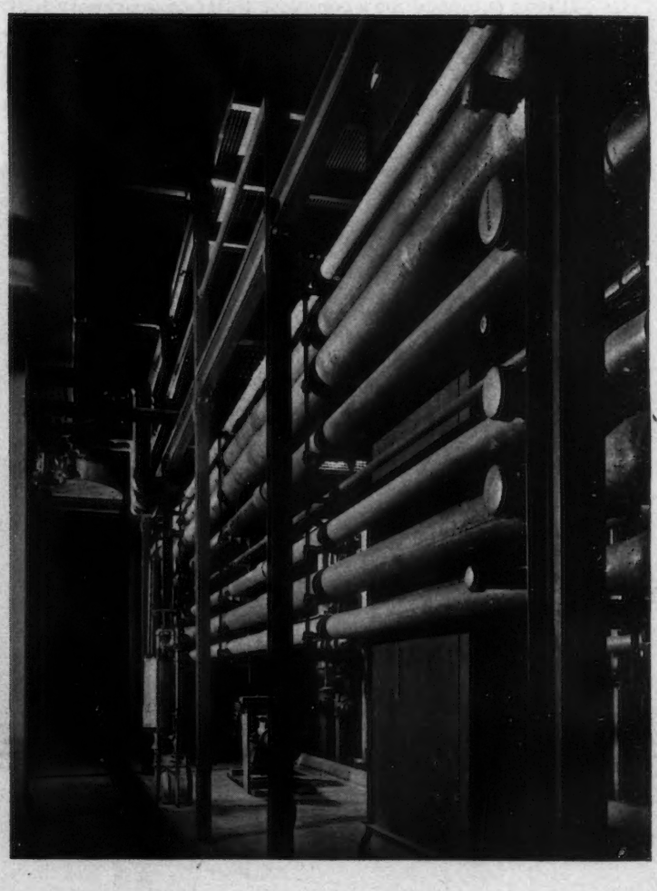




Warren Reynolds: Photographs Inc.

Opposite: looking upward from third floor through the several levels of grating on fourth and penthouse floors. Below: between rows of tables in undergraduate laboratories are white-painted glass units containing indirect lighting fixtures







GOLDEN STRAND HOTEL

Miami Beach, Fla.

Igor B. Polevitzky, Architect

Richard A. Belsham, Structural Engineer

Frederick B. Stressau, Landscape Architect

RESORT HOTELS are expected to be luxurious, and this new one at Miami Beach really is. Consisting of two five-story buildings and 16 small villas, it has its own beach, boardwalk, shuffleboard court, cabanas with hot and cold water, and a salt-water pool 40 ft wide and 82 ft long equipped for a complete water change every four hours. Every hotel apartment has a private terrace overlooking the ocean; each villa has a screened patio with a view of the ocean; and all rooms throughout the development have cross ventilation.

The two larger buildings have complete hotel facilities including dining rooms, bar, barber and beauty shops and drug store; many of the suites have kitchens. The villas are all two-bedroom, with fully equipped kitchens and separate service entrances, large living-dining areas, and two baths.

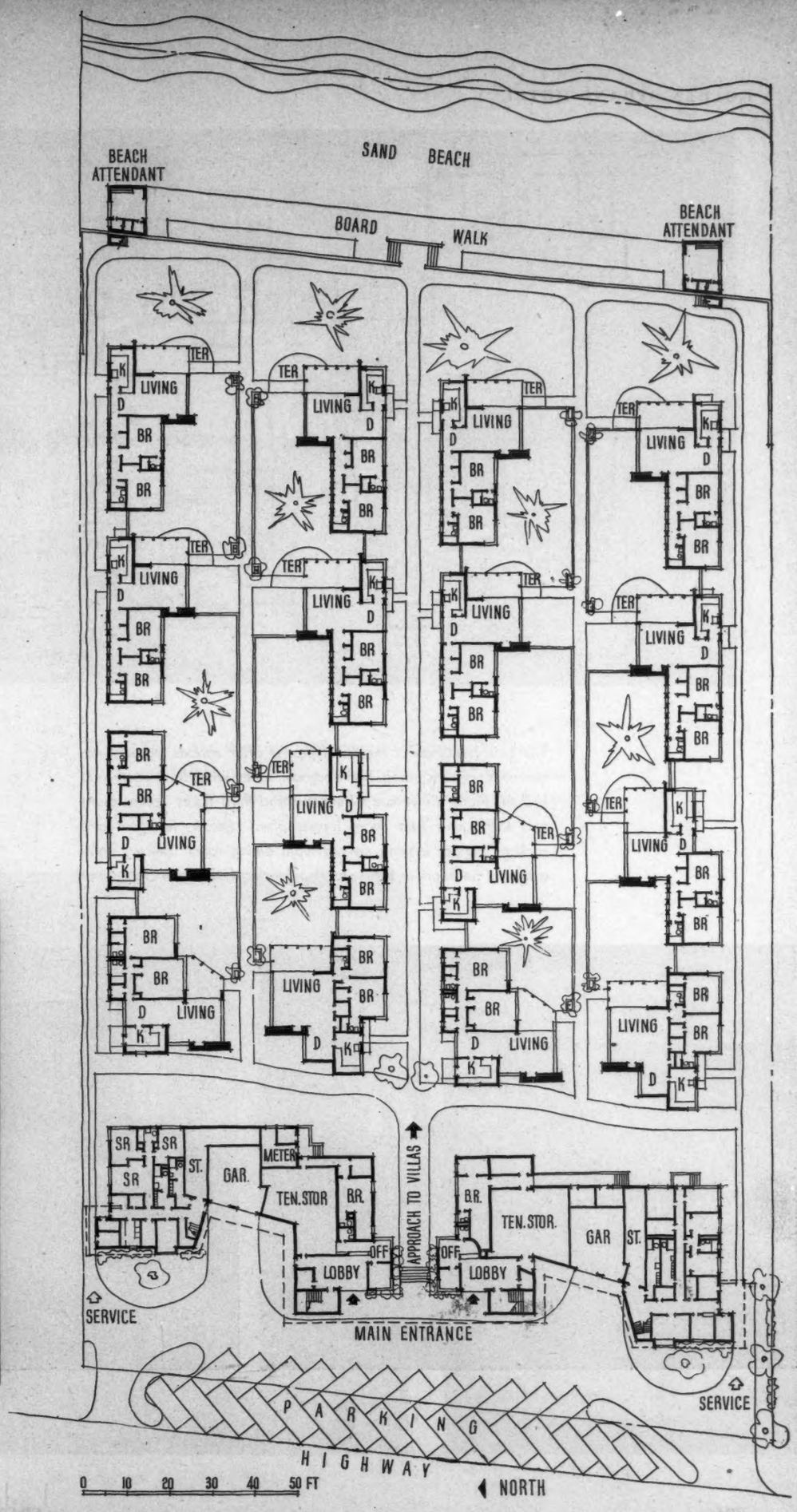


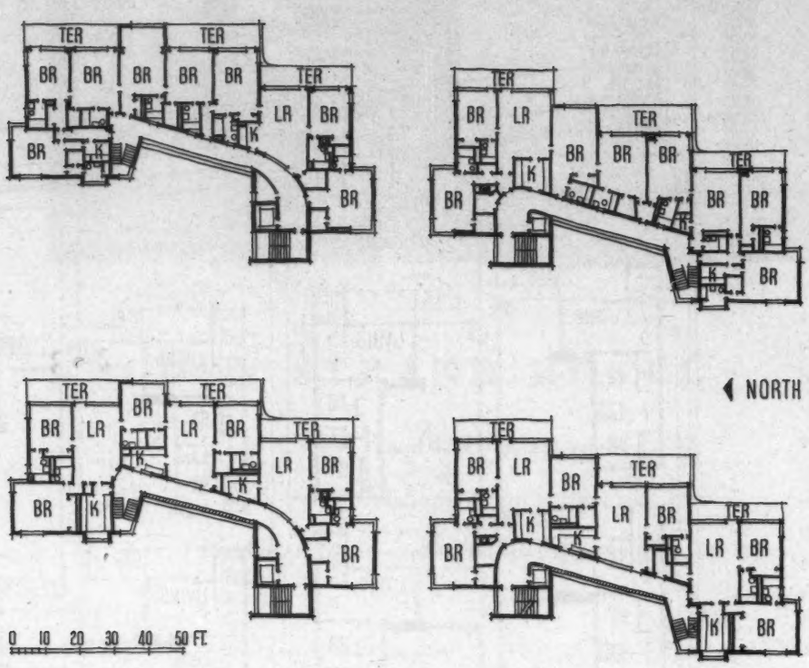


The deep site, stretching from the street back to a private beach, has been carefully planned for maximum use and maximum privacy. The two five-story buildings at the front serve as office and reception area. The villas behind them are arranged so that each has a view of the ocean and a private lawn. The beach is flanked by attendants' quarters

Rudi Rada: Pictor







The twin buildings of the hotel proper offer various types of accommodation, including two-bedroom suites with living room and kitchen. Plans above are of second and third floors (lower plan) and fourth and fifth floors (upper plan). Below, left: bar and cocktail lounge, looking toward main dining room. Below, right: a typical bedroom in hotel proper, showing balcony in center rear



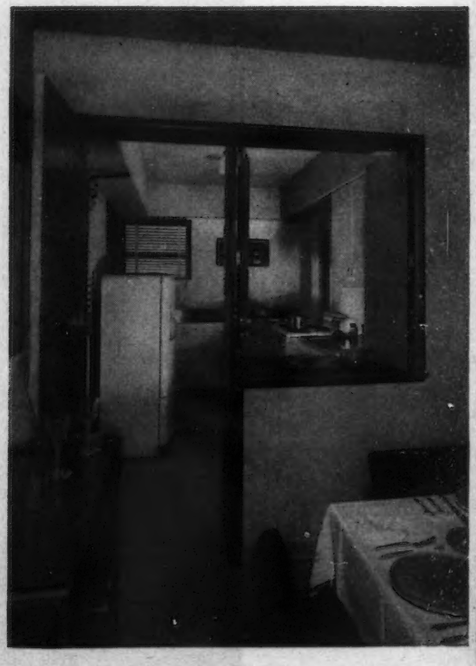




Rudi Rada: Pictor

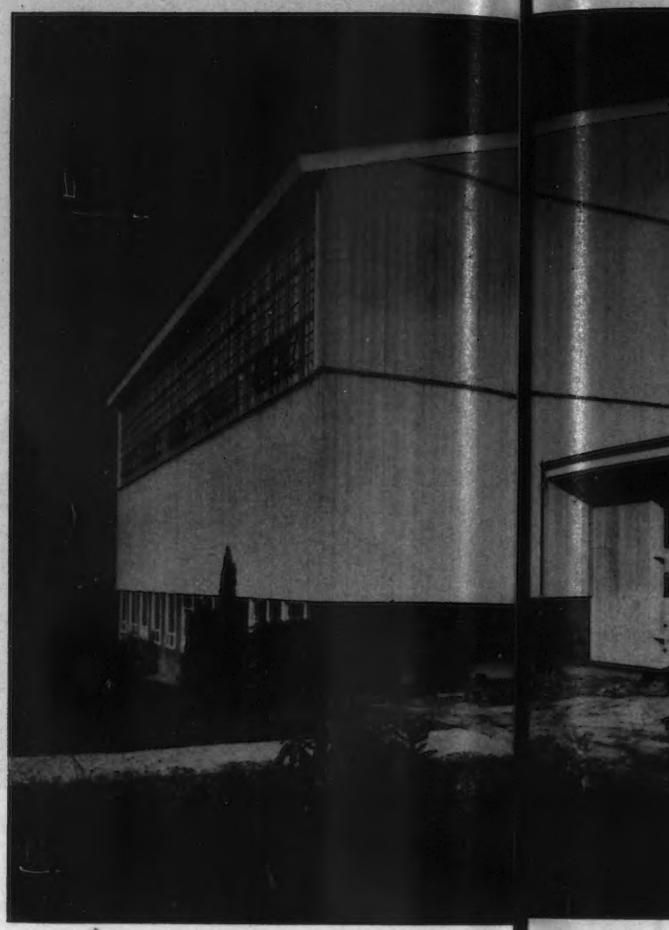
The villas are all free-standing one-story cottages with good kitchens and ample living space. Four of them (above) front directly on the ocean. Below: typical villa interiors





Richard Garrison Photos





ANDERSON & BECKWITH,

HARKNESS & GEDDES,

Associated Architects

GYMNASIUM BUILDING FO









FOR PRIORY SCHOOL

Portsmouth, R. I.

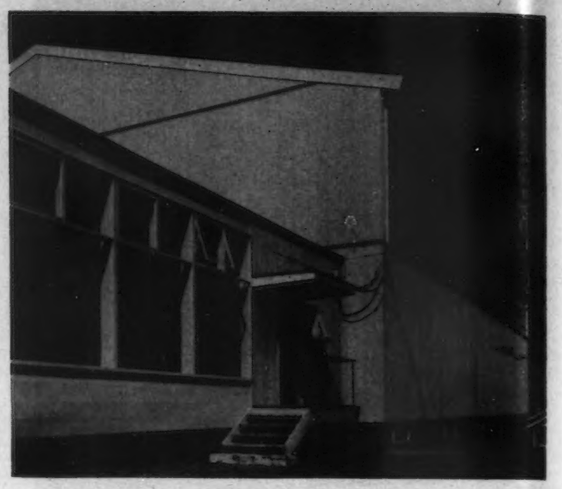


PRIVATE SCHOOLS, no less than public, must watch costs, particularly when constructing new buildings. The new gymnasium building for Portsmouth Priory School is noteworthy in this respect as well as for the quality of its design. For economy it is common to find gymnasium locker rooms in basements; here the sloping site has been utilized to permit large windows in what might otherwise have been a less suitable location for such facilities. The pitched roof follows naturally the form achieved by roof trusses which are almost arched, to gain maximum height without wasting cubage. The long east and west walls are largely glass; wood louvers (photo above) inside the glass of the west wall protect against breakage and against over-strong sunlight (east wall glass has rope netting for protection).

The plywood dado in the main room (also in photo above) not only supplies a finished interior surface; it also forms a combined plenum chamber for the warm air heating (note supply grilles at baseboard level) and a radiant heating panel, whose contribution to solving the heating problem was taken into account in system design. Primary heat comes from a boiler in another building. Framing is wood and steel on painted cinder block basement walls; exterior finish, gray-creosoted pine T & G siding, rough sawn; roof, special built-up, for steep pitch.

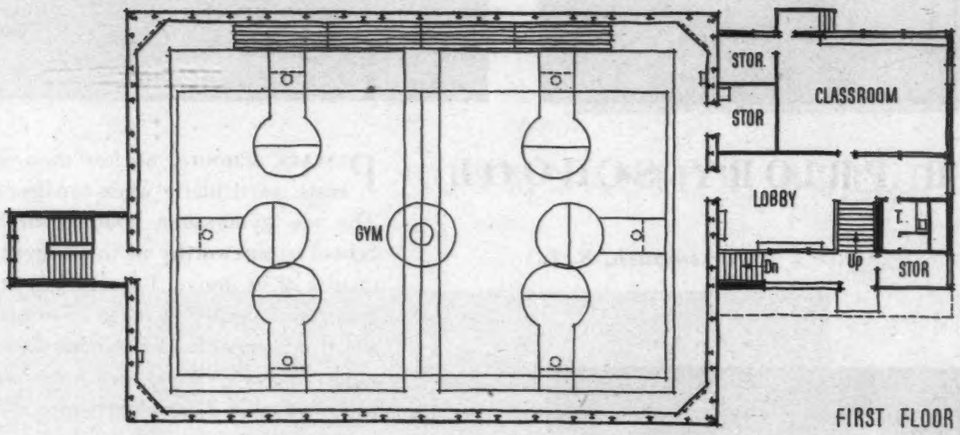
GYMNASIUM





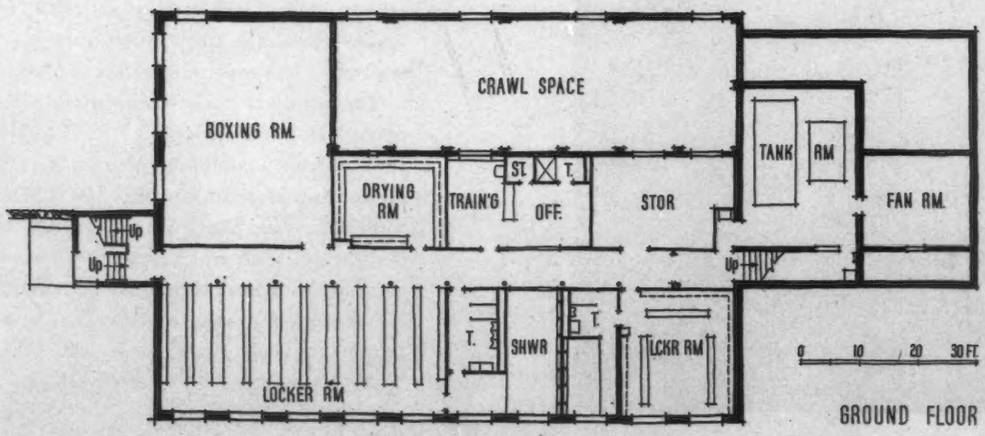
Above, left, basement locker room, well lighted since placement of building with respect to grades permits large windows. Right, east entrance leads to classroom which is used as a snack bar

Richard Garrison Photos



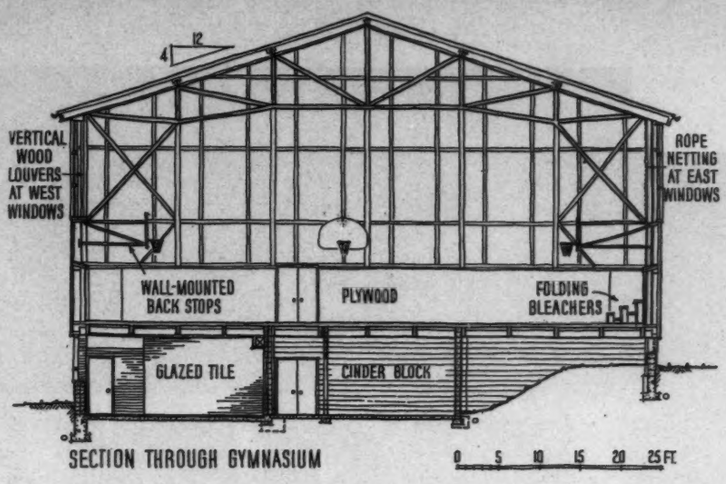
FIRST FLOOR

◀ NORTH

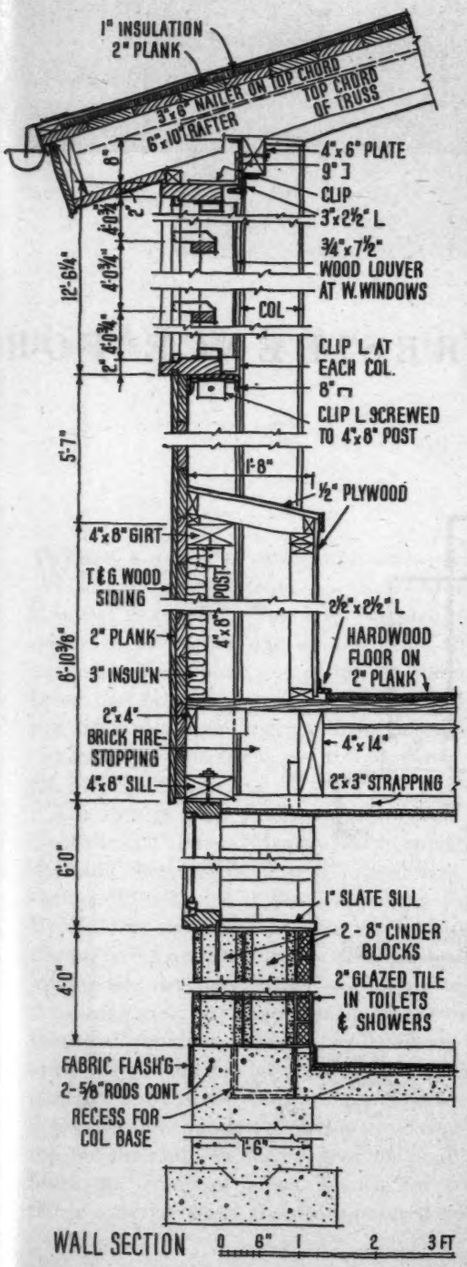


GROUND FLOOR

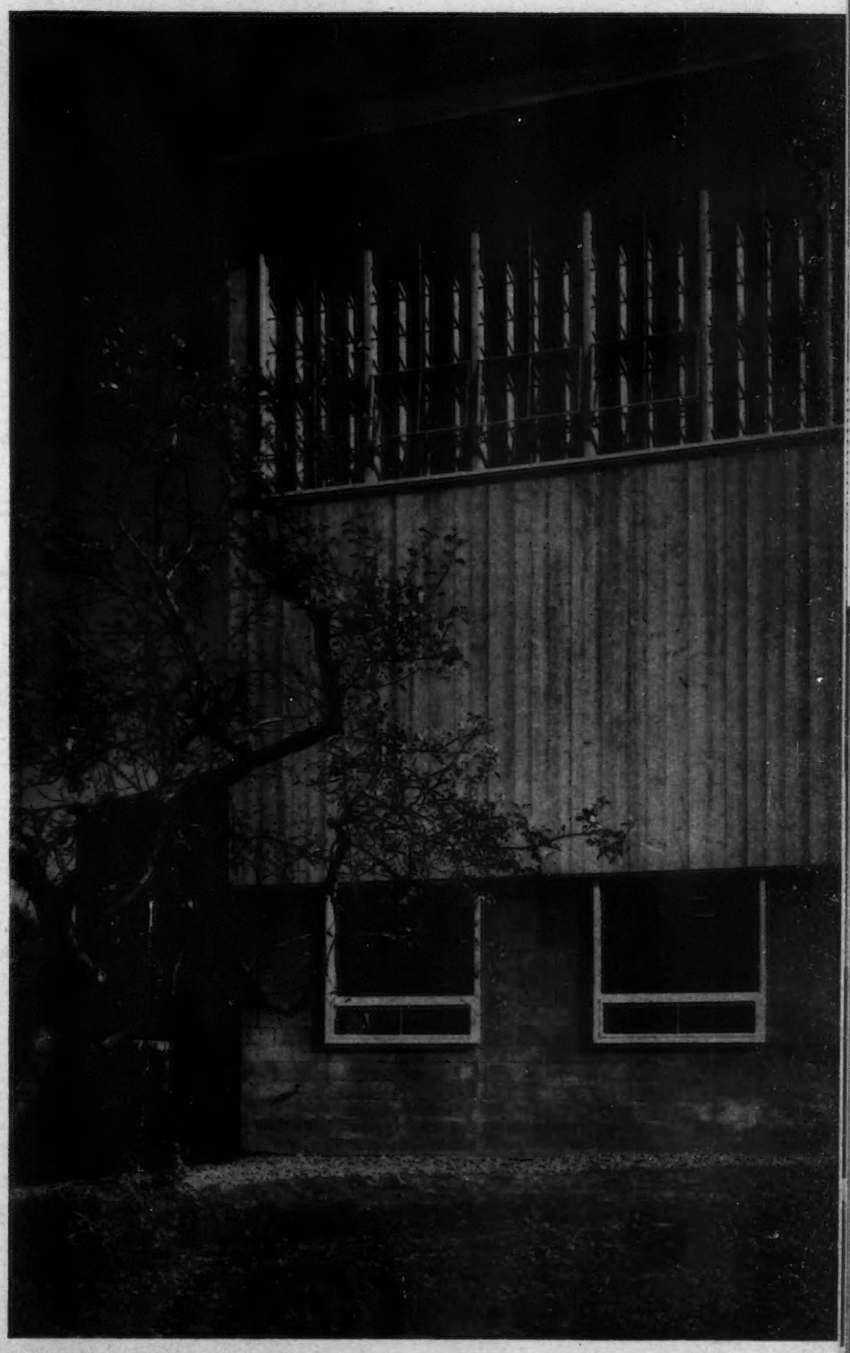
Section, right, shows unusual truss designed with elevated bottom chord in center of span to provide ample free height for basketball. Wall detail and photograph below show vertical wood louvers inside west window wall, for the double purpose of sun control and to protect glass against breakage. Heating is combination of circulating and radiant warm air. At each corner of gym is a space heater which blows warm air behind the plywood dado before expelling it into room for recirculation. Warm dado provides auxiliary radiant heat. Basement rooms have fin tube radiation or unit heaters



SECTION THROUGH GYMNASIUM



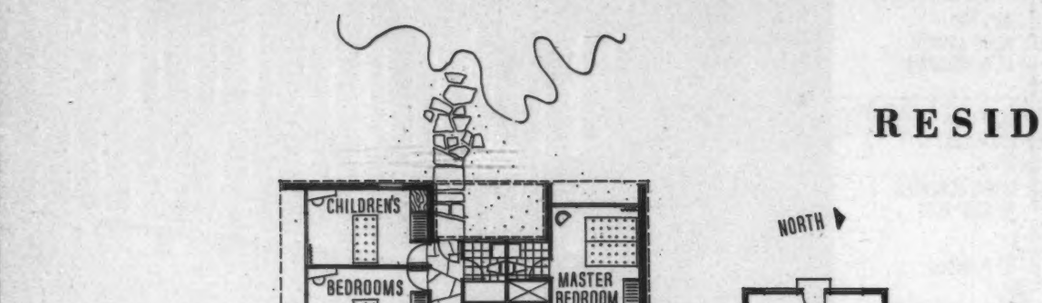
WALL SECTION





Ben Schnall Photos

RESIDENCE FOR





MR. AND MRS. GEORGE PALLEY

Croton-on-Hudson, N. Y.

Sanders & Malsin, Architects

WHEN A HOUSE IS DESIGNED, as was this, chiefly for summer and weekend use, it should be as open and informal as possible. This one was planned as the successor to an earlier one on the same site which had burned to the ground except for the chimney. The first house had been two stories in height, and the chimney had been correspondingly tall; in this new version the chimney was left intact, and towers unexpectedly above the low roofline.

The bi-unit plan shown opposite was developed to meet the demands of a family which, entertaining a great deal and therefore needing a large dining room, nevertheless did not wish to waste space for dining facilities. By dividing the house into two wholly separate units — one for living and service, the other for bedrooms — and joining the two by a rather narrow passage containing the dining area, the architects not only solved the entertainment problem but also achieved an exceptionally open effect. And having achieved that effect they emphasized it by giving each wing a separate color for its below-window panel: yellow for the living room, bright red for the children's wing, gray for maid's room, blue-black for common areas, brown for owner's room. Other exterior walls are white-painted concrete block.





Ben Schnall Photos



Fireplace wall separating living room and entrance hall (above left and below) is duplicate of that in original house; owner is carving design in pine panel above mantel. Coat closet in entrance hall (above right) has no doors, an innovation which has proved popular with family







Bathhouse at end of swimming pool (above) was built by owner to architects' design; it is topped by a bright red tank in which water for the showers is heated by sun's rays





Interior walls are sheetrock covered with burlap and painted. Ceilings are plaster on wire lath, floors cork or rubber tile. Huge dining table is ash, was built by owner to architects' design as was much other furniture



HOUSE FOR DR. & MRS. H. ENGELBERG,

Henry Robert Harrison, Architect

Structon General Contractors, Builders



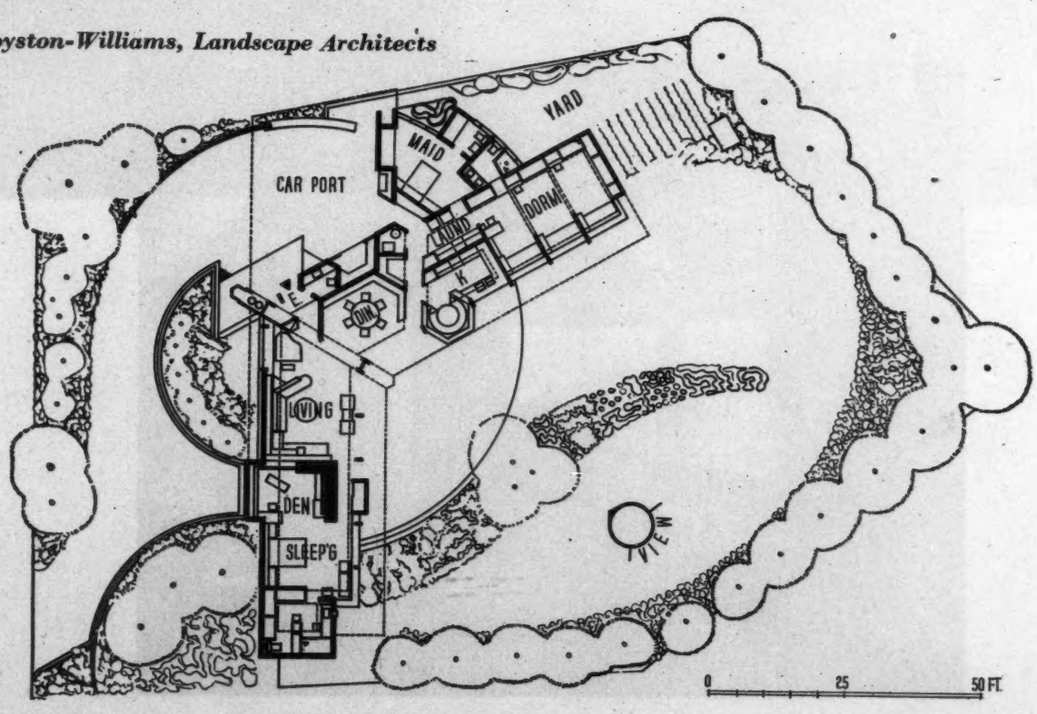
NESTLED CLOSELY INTO A HILLSIDE, this quiet house opens on a spectacular view of the Los Angeles area to the east, south and west. The architect worked in collaboration with the owners — a young doctor, his semi-invalid wife, and three active sons — to produce a structure exactly fitted to their needs. Minimum walking distances were achieved by planning the house on a single level, with main and service entries adjoining the carport (visible in left portion of photo above). At one end of the house, the master bedroom suite forms a secondary sitting room with adjoining study where the doctor can work at night. Living and service areas baffle noise from the children's combination playroom and dormitory, placed at the other end of the house close to the supervision of the nursemaid. The view is dramatized from all family rooms by large, unscreened windows with ventilating louvers in the sills. A two-level outdoor living area at the rear has provision for future swimming pool.



Julius Shulman Photos

LOS ANGELES, CALIF.

Eckbo-Royston-Williams, Landscape Architects





Julius Shulman Photos



The master bedroom (above and below) provides a quiet retreat for the owners. The character of a living room is imparted by the use of simple, natural materials and finishes. The study alcove (above) is lighted by clerestory window



Living, dining and service areas (below), centrally located for convenience to all members of the family, open on a large outdoor terrace. Use of interior glass panels and half-partitions increases sense of spaciousness. Cabinet work and furniture, other than chairs, were designed by the architect and executed by Hans Grassl in water stained birch. Walls are birch plywood and brick





Plate glass (extreme right in photo above) runs completely to the floor in living and dining areas to emphasize the view. Inside glass reflection is avoided at night by use of soft indirect lighting. High windows on the north stimulate air movement across the ceiling. Radiant heating is provided by hot water coils in the concrete floor slab. The system is divided into four zones, controlled by thermostats with motorized valves. Extra coils heat air entering from ventilating grilles placed under many of the windows

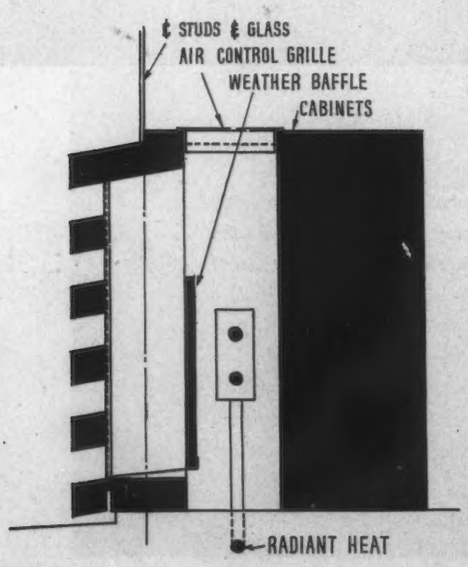
Children's combination playroom and dormitory has folding partitions for conversion into three private rooms. Built-in cabinets give ample storage space for clothes and play equipment. Floors are asphalt tile, walls plywood





Julius Shulman Photos

Warm air entering grilles by beds (above and right) heats walls, prevents drafts. Detail below shows use of supplementary hot water coil to heat the incoming air







Julius Shulman Photos

ROAD CAMP WITH BENEFIT OF ARCHITECTURE

Mill Creek Summit Maintenance Yard

Los Angeles Country Road Department

Richard J. Neutra, Architect



CAMPS FOR HIGHWAY CREWS are far from the normal routine of an architectural office. But this one, by a well-known architect, makes its point rather well. Here is a well ordered group consisting of: dormitories and dining facilities for the road maintenance crew, equipment garage and yard, and manager's house, done in domestic scale and manner, to lend a note of dignity to what so frequently suggests a rough and humdrum existence. The architect devoted especial care to preserving the appeal of a really grand site in the mountains. Climatic conditions are extreme, ranging from six-foot snows and mountain gales to hot winds from the inland desert. All in all, the touch of an architect has added those imponderable values of orderliness and pride to a type of abode which has a notable need for them.



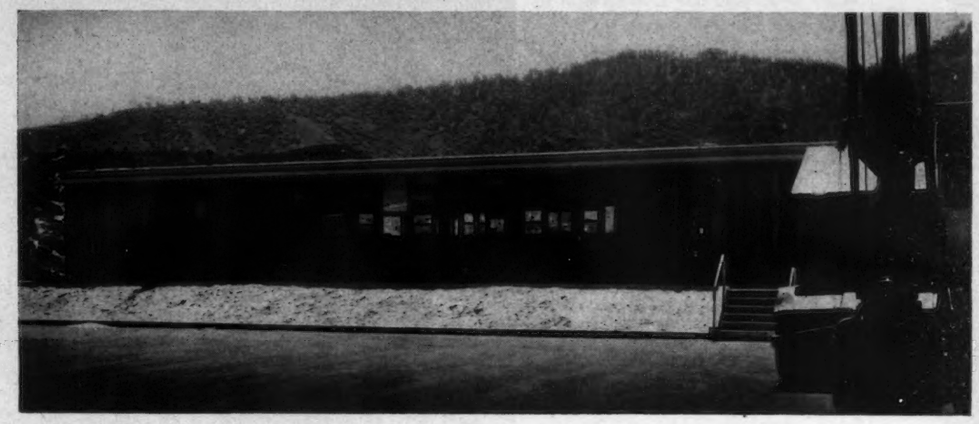
Julius Shulman Photos

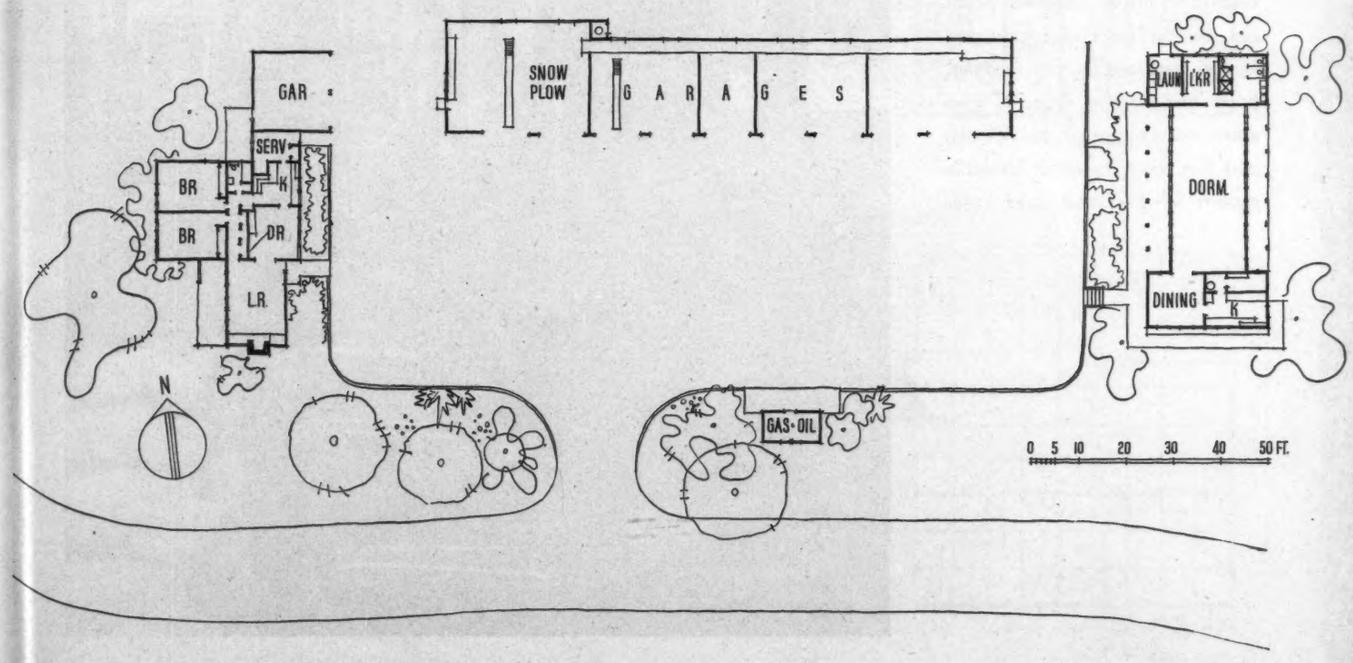


Manager's house faces away from road equipment yard, with a magnificent view of valley and mountains. Wide shaded porch looks toward these views, enjoys privacy from activities of the yard



Road maintenance workers live in the camp through the week, see their families over week-ends, weather and work permitting. Dormitory building is placed at end of equipment yard, and elevated several steps above it. This placing permits good observation of the yard itself, but also opens views to mountains beyond. The elevation is useful, too, when six-foot snows are a problem







Julius Shulman Photos



Dormitory building was designed to have a residential character, and to keep camp life as orderly as possible. Besides the dining room and kitchen there are laundry facilities, baths and storage rooms to give every encouragement to tidiness, and thus subtly to set a favorable pattern for life in a road camp

MODULAR COORDINATION IN FRAME HOUSES

By James T. Lendrum, Acting Director

Small Homes Council, University of Illinois

Articles and Time-Saver Standards in recent issues have discussed the principles of Modular Coordination, based on the 4-in. module. Now, Professor Lendrum tells how the Small Homes Council has adapted the system to frame construction. Time-Saver Standards on pages 177, 179, 181 discuss construction details

WE CONSIDER MODULAR COORDINATION a tool whereby the draftsman or designer can predict with a high degree of accuracy, and very easily, some of the conditions which are going to appear in the field — greatly reducing cutting and fitting. It is also a tool with which the foreman or craftsman can check the accuracy of his work at any point and thereby be assured that subsequent operations can be done with greatest ease.

One difference between our work at the Small Homes Council, which admittedly has been primarily in frame construction, and masonry construction is in the size of the working module. The standard 4-in. module, which is so effective with masonry, loses some of its value in frame structures because of the increased size of the individual pieces going into the house and because of the reduction in the number of these pieces.

Practically, we operate in a rather simple fashion, and the only requirement that is absolutely necessary in order that any architect might duplicate our results is a mental one. You must agree to accept the mental discipline — it is something like stopping smoking or going on a diet; it is easy to talk about and often easy not to do, but once you have mentally accepted the responsibility, it is not hard.

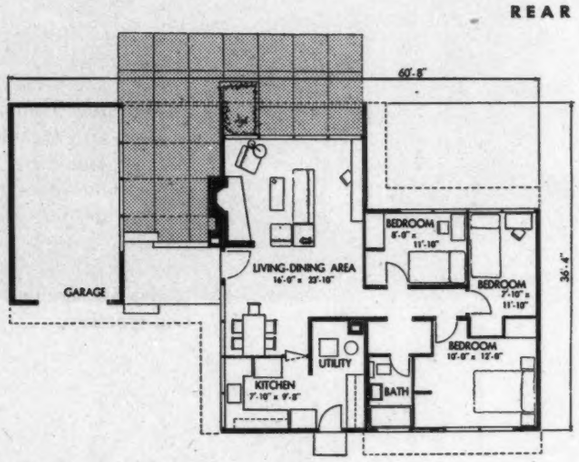
Convenient Modules

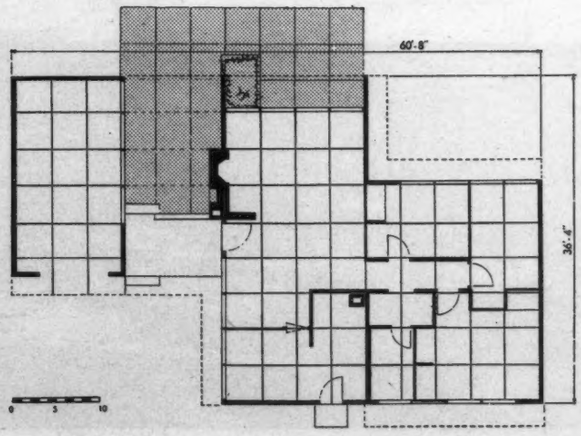
A 4-ft module would be ideal from a construction standpoint, since it corresponds with stock sizes of sheet materials. It is not impossible from a planning standpoint, but often we find a 2-ft or half module is desirable, and on occasions, we think in terms of a 16-in. or a 32-in. module, corresponding with 16-in. stud spacing. Of course, these are all multiples of the basic 4-in. cube.

In one detail only do we vary from most people who are using sheet materials in frame construction. We use the 4-ft module (or the 2-ft or 32-in., etc.) to

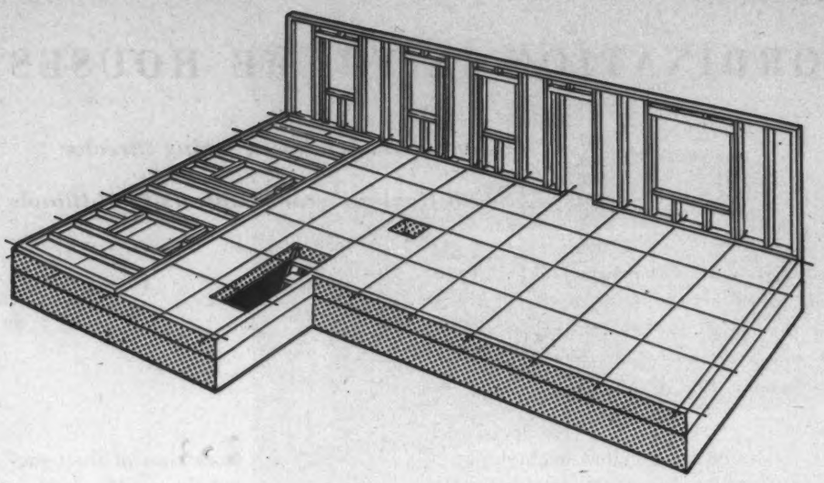


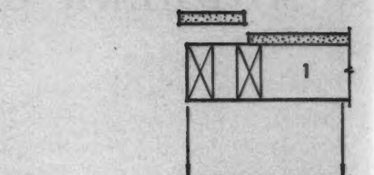
REAR VIEW

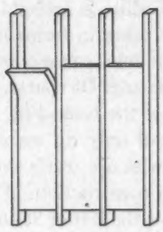


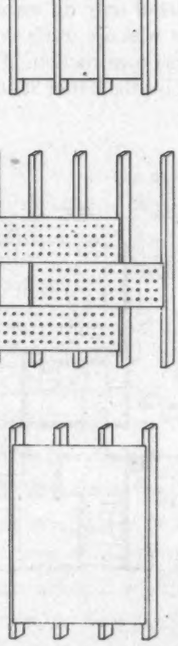


The lower plan shows how a 4-ft module has been used to design a house based on the system of unit planning of the Small Homes Council. In this system, standardized plans for rooms or groups of rooms (made up of a certain number of 4-ft squares) can be combined in different ways to form a variety of complete house plans









The only variance from common application of sheet materials for frame construction is that the 4-ft module (or 2-ft or 32-in.) is used to the nominal inside face of the wall rather than to the exterior face. This is shown above in an example of tip-up wall construction. Sheet and insulation materials (left) either inside or out fall directly into place, and may be applied before walls are erected. The end stud (above, right) must be off-set to allow for wall assembly

the nominal inside face of the wall rather than to the exterior. This was chosen after a number of field experiments which included actual construction of buildings, because it allowed very definite flexibility in the assembly process and not because of a modular relation. It perhaps is an outstanding example of the interrelation between modular design and improved construction practices.

Given a 4-ft planning module to the inside face of the wall, anyone can lay out, even without previous experience, a perfect modular wall — it is automatic. The sheet materials, either inside or out, fall into place perfectly. Stud spacing, either 16-in. or 24-in. on center is natural. Only one adjustment must be made in an entire wall, and that is the end stud which (see top figures this page) must be offset to allow for an assembly

Modular coordination ties right in with engineering methods for frame construction of houses. Assembly line fabrication of wood trusses is demonstrated below



process. Since the wall is so simple are there any difficulties? The answer is yes — openings.

Windows Need Study

There still remains work to be done on windows before our frame structures become truly modular, and the work will not be an isolated study of the window itself, but a study of the window in relation to a wall frame and such things as headers over windows, etc.

We have made a continuous study on windows and are still far from satisfied with the results. These are a few essentials:

1. The window detail must be flexible to allow for glass in any position on the wall from bottom plate to top plate.
2. The detail must provide for ventilation or fixed glass in any of these wall positions.
3. The detail should not require quantities of special millwork.

Pre-assembled Trusses

For the roof of the house, "pre-cut and pre-assembled" trusses, combined with automatic, even spacing which results from a control of the basic house dimensions, makes work rather simple.

The Interior

Interior partitions still need a great deal of study. Kitchen cabinets and closets are still in an exploratory stage. The manufactured kitchen cabinet is entirely in keeping with our "pre-cut, pre-assembled, pre-finished" recommendations. The rest of our recommendations, such as continuous ceiling, continuous floor, etc., are not really modular, they are the result of our combination of modular and improved methods. They do save time and money.

Floor and Foundation

The use of concrete block for foundations is greatly simplified by the acceptance of dimensional control for the over-all house size. When slab-on-ground construction is used, there is no problem with the floor. When a basement or crawl space is used, there are a variety of ways in which the detail can be handled. The fact that we run our modular dimension to the inner face of the wall means that the joists, which come in 2-ft increments, may be either too short or too long, unless a double header or blocking is used (see Time-Saver Standards, page 179). This is a relatively minor material and labor cost when compared with the major savings which can be made above the floor line.



Photos Courtesy Small Homes Council

Modular spacing is apparent in the fenestration and ventilation louvers of the house interior above and in a Small Homes Council structure below. Also note the edges of the trusses (spaced on 2-ft centers) shown exposed (below)





—Drawn for the RECORD by Alan Dunn

"Why didn't you tell me about Dr. Eliot's Five-Foot Shelf before I adopted the four-foot module!"

PREPARING THE LAND FOR BUILDING

The editors believe this article to be particularly timely in view of defense housing developments mushrooming over the country. Insufficient study of sites and inadequate knowledge of good principles of drainage frequently have resulted in permanent damage or costly corrective work to housing projects

GRADING AND DRAINAGE are necessary evils in almost all construction. Unfortunately, the planner usually visualizes his site completely developed as either flat land or gently rolling ground completely void of water. Consequently, he proceeds to draw plans for his development complete in every detail except for the grading and drainage, which are either completely omitted or an appendage hastily added at the last minute.

If any grading or drainage plans are drawn up, they are frequently glossed over in the construction mainly through carelessness and lack of interest. After all, there is no danger to life if the ground ends up low where it should be high, or if people must walk through puddles to get into a building.

However, the items that often make one project more attractive than another are dry grounds and the lack of dampness in the building.

Drainage is simply the control of the flow of water on top of or under the ground; so the subject may be divided into surface drainage (Part I) and underdrainage (Part II).

Surface Drainage

The purposes of surface drainage may be listed briefly as follows:

A. To prevent or minimize property damage.

B. To permit the maximum safe use of facilities either during or immediately after a rainstorm.

C. To make land valuable that was formerly of no practical use — thus swamps are drained to create new farm land.

D. To better the health of a community. Drainage will kill the larvae of mosquitoes.

E. To enhance the beauty of a site.

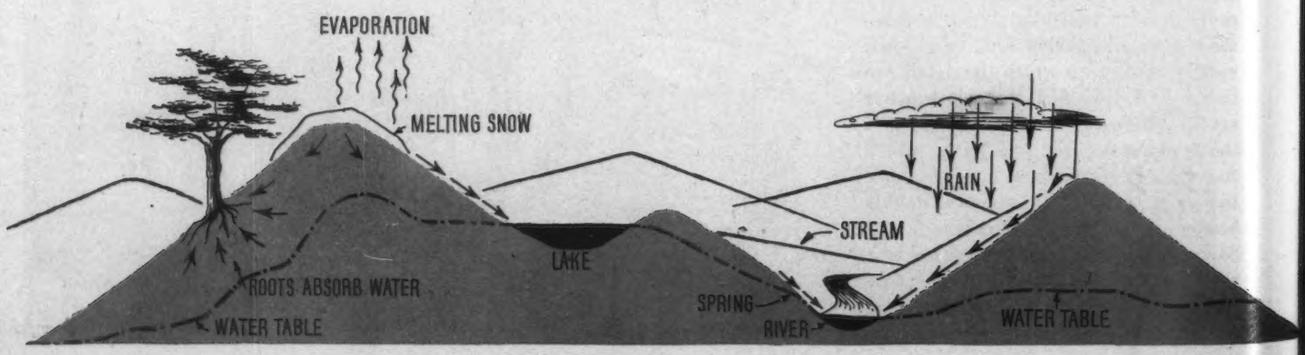
Good surface drainage can be obtained by any one or a combination of the following methods. Most important is choosing the proper location to utilize the natural topography, or perhaps the contour of the site may have to be altered somewhat. Other man-made methods are ditches and pipe systems (including culverts, manholes, inlets) to lead water to the nearest watercourse (river, lake, drainage channel). Some types of drainage structures return the water directly to the watertable.

Methods of Drainage

The simplest way of obtaining good surface drainage would be to raise one end of a site so that all the ground slopes to the other end. This is found frequently in natural formations, but unfortunately it does not work out in developments — there is always a building, walk or pavement blocking some of the water. A remedy is to alter the contour of the land to form swales (a shallow ditch, see Fig. 3) and ditches, with these ditches sloped so the water will run off. Still, we must at some time cross a path. At these points, underground pipes or bridges come in very handy.

The use of drainage pipe and inlet structures (catch basins, manholes, etc.)

Drainage is simply the control of the flow of water. As an introduction, this drawing reviews nature's endless rain cycle. Rain either runs off through watercourses to lakes or rivers, remains on top of the ground forming puddles, evaporates, or goes into the ground. When it goes into the ground it is either picked up by plant life, is absorbed by the soil, or flows into underground streams or lakes. The level water seeks underground is known as the watertable



Drawn by Sol Erlich

Drainage

Part 1: Surface Drainage

By J. L. Staunton, Hydraulic and Sanitary Engineer,

of Seelye Stevenson Value & Knecht,

Consulting Engineers



Photo Courtesy Soil Conservation Service

This Michigan farm land will be drained so that valuable soil may again be cultivated

under the ground will improve the appearance of a site by minimizing topographical alterations. This sometimes decreases the amount of earthwork.

Disposal of Rainwater to Soil

Runoff may be discharged to the watertable when we are fortunate enough to have a suitably porous soil. This was done at a military airfield constructed for the army at British Guiana, and at the Miami International Airport. In both cases the ground is so porous that almost all the rainfall is promptly absorbed, requiring very little drainage pipe and permitting the ground, except for the pavement, to be quite flat.

Drywells are used to drain water to the watertable when the surface of the soil (top soil and grass) is relatively impervious but the underlayers relatively absorptive. Figure 1 shows a typical drywell quite successfully used at the Grumman Airport, Bethpage, Long Island, New York.

In order for a drywell to be properly designed, it is necessary to make tests of the soil to see how fast the water will be carried away. It is my belief that improperly designed and constructed drywells have caused more water in the basements of small houses than any other single factor.

Frequently, a house built on completely dry ground is troubled with a flooded basement six months to a year after construction. Upon inspection, one would find that the roof leaders ended in drywells about 5 to 20 ft from the house. At first, the ground would carry the water away from the drywells but eventually a lake would form around most of the foundation after each rainfall. Drywells should never be used in tight soil such as clay as this is bound to cause flooding of basements.

Recharge basins are drywells which are used to add water to the watertable.

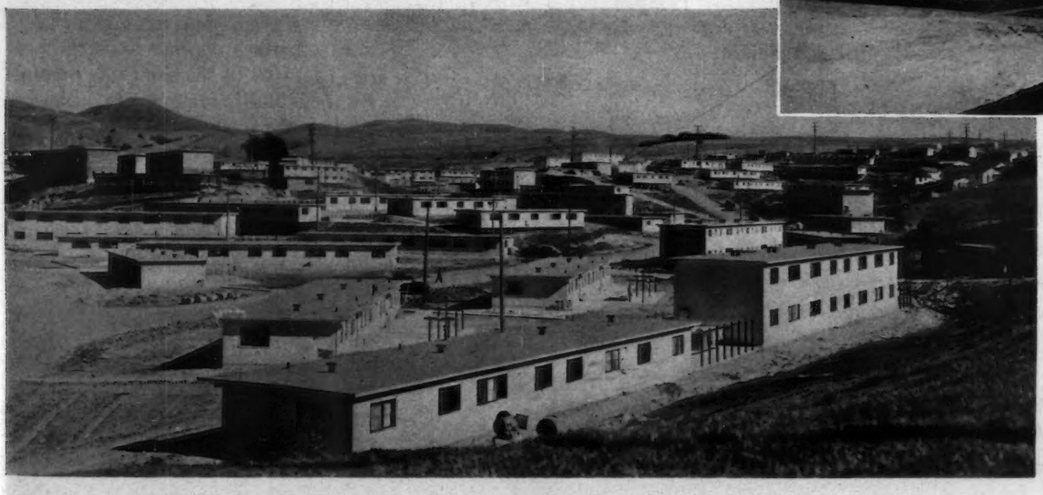
Design of Drainage for Probable Rainfall

A drainage system can never be adequately designed to care for all the water that might run off. A drainage system can be designed only on mathematical probabilities, based on either rainfall or runoff. This might sound odd, but all

War housing in California was built on inexpensive land in such way as to take advantage of topography for surface drainage. Note direction of slopes around the buildings

Photos Courtesy HHFA





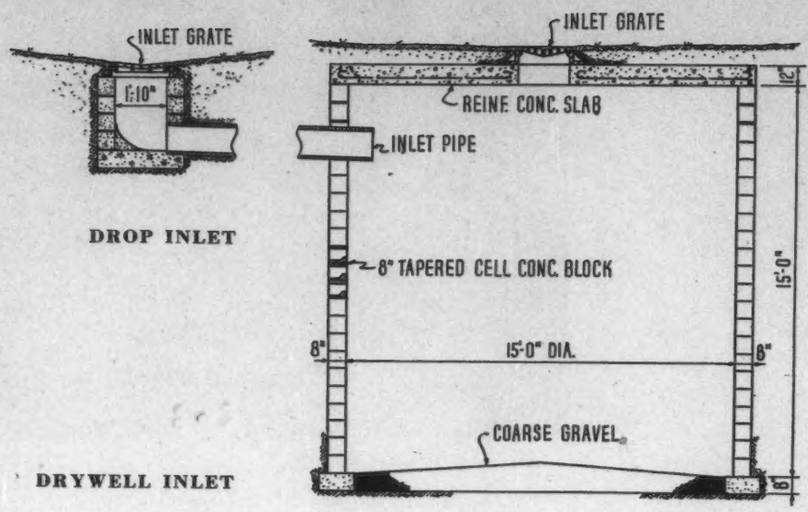


FIG. 1

Where the top of the ground is impervious, but ground underneath is relatively porous, rainwater is drained to structures called "drywells" and thus returned to the watertable

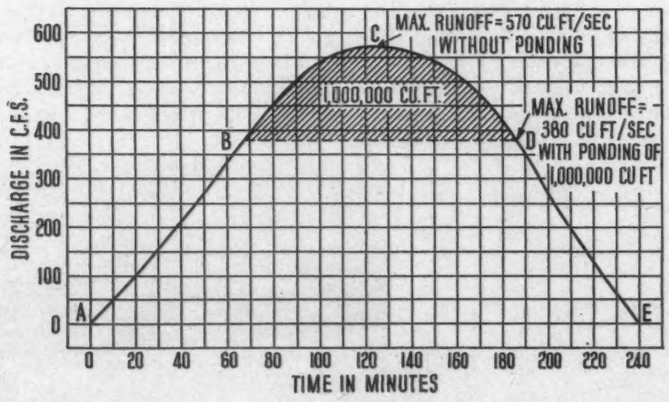


FIG. 2

EFFECT OF PONDING

Curve ABCDE shows a typical runoff pattern (water to be drained) of an area due to some assumed storm. The area under ABCDE is the entire volume of runoff, while 570 cu ft per sec (Point C) is the rate of runoff for which the pipe or watercourse will have to be sized. Suppose we had a reservoir, empty at the start of the storm, which could hold 1,000,000 cu ft of water. Then we could subtract volume BCD (hatched) from ABCDE and would have to provide only for a maximum flow of 380 cu ft per sec (point B or D)

design is based on probability: highways are designed for a certain number of cars per hour; bridges and buildings are designed to support so many pounds per sq ft; airports are designed for planes of certain weights and landing speeds; etc. When these limits are exceeded, we either have to scrap our initial structure or suffer failure in some form or other.

Since drainage is constructed to protect, enhance, or increase the usefulness of a development it is essential to weigh: (1) cost of the drainage system, (2) cost of the remainder of the development, and (3) the amount of damage and frequency of its occurrence.

Estimating Size of Drainage System

How does one determine the amount of water that must be cared for? The simplest and most primitive way is to go to a site and measure the high water marks at existing watercourses (streams, existing drainage structures). When these are obtained, together with survey data, it is relatively simple to compute the amount of water that ran off at the time of the high water.

The next simplest way is by the use of empirical formulas: the most common being *Talbot's Formula:* $a = C\sqrt[4]{A^3}$ where a = required cross section of waterway in square feet, A = drainage area in acres, and C = a coefficient depending on the character of the ground. These formulas were originally devised for one particular location and as such were very good. Unfortunately, they have fallen into relative disrepute because they had the misfortune of being universally used and runoff patterns vary in different locations of the country.

The most common procedure used for determining runoff is the so-called *Rational Method.* This formula states that $Q = CIA$ where Q is the rate of runoff in cubic feet per second; C is a coefficient of runoff which depends upon the type and character of the site being drained; I is the intensity of rainfall in inches per hour; and A is the drainage area in acres. With this method, we can obtain from records the rainfall intensity probabilities at almost any location and by knowledge of the site we can arrive at the other factors.

The *Unit Hydrograph* is also frequently employed to determine drainage requirements. This graph is based on actual data either of the watershed in question or one having similar characteristics. This method is much more accurate than any of the others but is also much more laborious to compute, and at

present is used primarily for flood control determinations.

A well-designed drainage system should make adequate allowances for future development. As a community develops, more houses are built and more roads and walks are constructed. All these surfaces are both relatively impervious and smooth. Thus, a greater volume of water must run off in a shorter length of time.

Sometimes it is possible to obtain an economical drainage system by making use of lakes or ponding areas. The effect of using ponding is shown in Fig. 2.

Grading

In planning the grading of a site to be sure water drains off properly, it is important to know the minimum slopes required to avoid the formation of soft spots or unsightly puddles. One essential is to know what sort of workmanship will be obtained. This is very similar to specifying tolerances in machine shop practice. For general work, it can be said that a minimum effective grade of 0.3 to 0.75 ft per 100 ft should be sufficient for paved areas and 0.5 to 1.0 ft per 100 ft should be sufficient for turfed or graveled areas. Detailed information appears in the table on page 161.

It is not considered good practice to have water running from dirt onto and across paved areas, washing dirt onto the pavement. However, this is done at times in the interests of economy. Ground should be approximately 1½ in. below the pavement to allow for turf development, since grass pulls up the earth with it. If not done, this prevents water from running off.

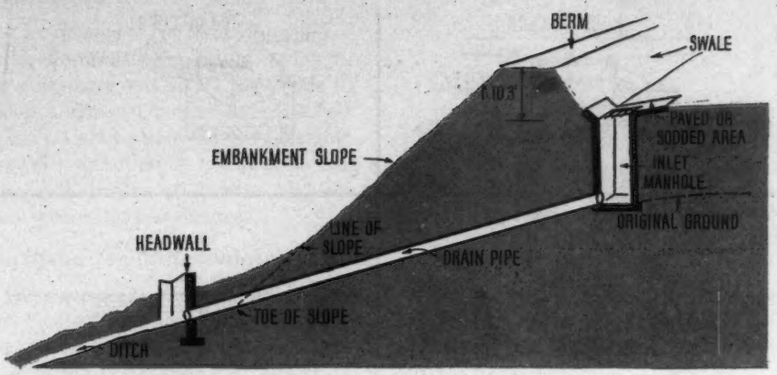


FIG. 3 Drawn by Sol Erlich

A recommended method of draining an embankment to prevent soil erosion is shown above. The berm, swale and inlet keep the water from running down the side of the bank, the pipe controls the water through the bank, and the headwall and ditch assure that the water is kept clear of the toe

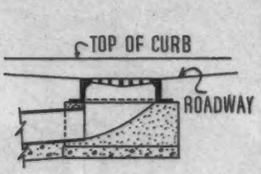
Photos Courtesy Bureau of Public Roads and Department of Commerce



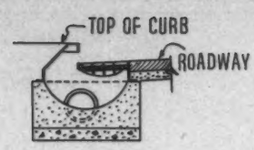


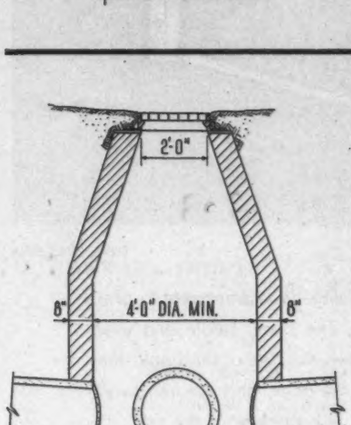
Steeply cut slopes on the old highway (left) caused serious erosion, clogged drainways and restricted sight distance. In the same highway after reconstruction, note flat cut slopes, rounded at the top and seeded. This is considerable improvement, but the method at the top of the page is better

ROADWAY INLET



CURB INLET





BRICK INLET MANHOLE



CATCH BASIN

Typical drainage structures are shown at the left. Manholes and catch basins are designed to connect drainage lines and for inspection purposes. Catch basins are not recommended, because they are generally poorly maintained, leaving large deposits of silt and furnishing a breeding place for mosquitoes

FIG. 4

Erosion

Erosion is particularly annoying in grading and draining a site. There have been compiled all sorts of tables giving maximum velocities of water permissible in order to avoid erosion of ditches. Unfortunately it is seldom practical to adhere to these very conservative figures. The best ditches are paved or riprapped (covered by rocks and stones, see Fig. 7). The next best are sodded or turfed. Sands and silts are undesirable in ditches.

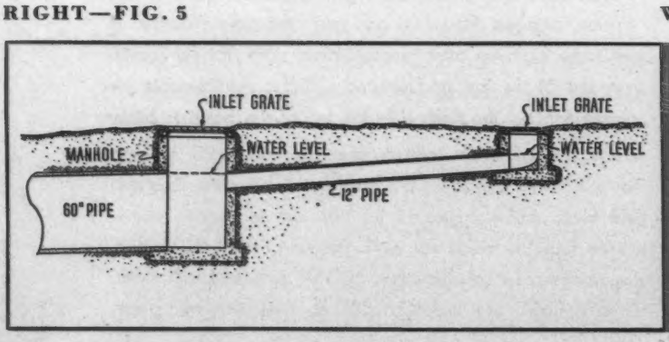
Quite often a ditch when first constructed will erode until a stand of grass has developed. Also, the tendency toward erosion or settlement in front of an inlet to a ditch causes some initial maintenance. As these should not be recurring expenses, it is simpler to accept these two minor initial maintenance costs than to devise some elaborate and expensive design to avoid them.

If prevailing grades are steep, erosion of ditches can be minimized by constructing the ditch flatter than adjacent grades and then dropping the ditch from time to time over little check dams which may be constructed of wood, rock or concrete.

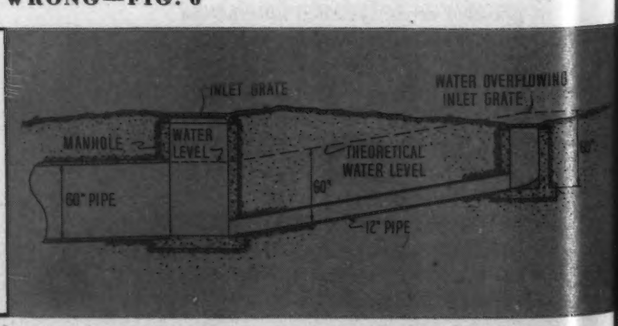
Erosion is a very serious problem with high embankments. Here, water is apt to wash away the entire embankment if sufficient care is not taken. Theoreti-

The wrong method of connecting two drainage pipes violates an elementary principle of hydraulics. When the 5 ft dia pipe flows full, the 1 ft pipe will have a pressure of 4 ft of water over the top of it, and the land around the entrance to this pipe might be flooded as indicated by the dashed line

RIGHT—FIG. 5



WRONG—FIG. 6



DESIRABLE SLOPES

Table from "Public Housing Design" NHA, June 1946	*Percent Slope*	
	Maximum	*Minimum*
Streets, service drives and parking areas	8.00	[1]0.50
Collector and approach walks	[2]10.00	0.50
Entrance walks	[3]4.00	1.00
Ramps	15.00	....
Paved play and sitting areas	2.00	0.50
Paved laundry yards	5.00	0.50
Paved gutters	....	0.50
Project lawn areas	[4]25.00	1.00
Tenant yards	10.00	1.00
Grassed playgrounds	4.00	0.50
Swales	[5]10.00	[6]1.00
Grassed banks	4 to 1 slope	
Planted banks	2 to 1 slope (3 to 1 preferable)	

[1] *0.75% for dished section.*
[2] *Less where icy conditions may occur frequently.*
[3] *Slopes up to 10% or more are satisfactory provided walks are long enough to employ a curved profile, so that a slope not exceeding 4% can be used adjoining the building platform. See also preceding note.*
[4] *Steepest grade recommended for power mower.*
[5] *Less for drainage areas of more than approximately ½ acre.*
[6] *2.00% preferable in all cases, particularly so where swales cross walks.*

cally, if there were no concentration of water along the top of a bank the water would flow down in an even sheet. Actually, this does not occur. Due to the minor irregularities in grading, in soil compaction and in soil quality, small crevices are formed. The water tends to concentrate in these crevices, eventually gouging out deep cuts and finally causing failure of the embankment. One way of obviating these difficulties is to drain the embankment as shown in the right-hand highway photo, page 159. A preferable method is shown in Fig 3 at the top of that page.

Some Fundamentals of Hydraulics

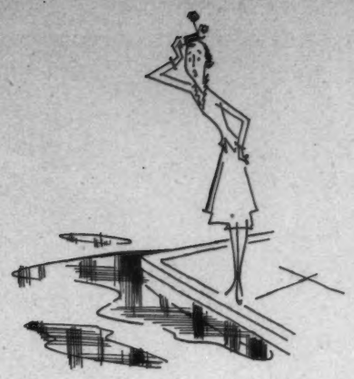
A knowledge of the basic principles of hydraulics is quite important in designing a drainage system. It is possible to choose a correct pipe size and ditch laid to correct grades and still have flooding if proper attention is not paid to hydraulics. Figs 6 and 8 show two typical cases where this has occurred.

Facilities for Maintenance

Adequate slopes for pipes and culverts and facilities for maintenance and inspection of drainage are essential. It is desirable to have a minimum velocity of 2.5 to 3.0 ft per sec when the pipes are flowing at full capacity to keep the pipes clean. Lower velocities let solids settle and eventually clog the pipe.

Manholes should be placed approximately 200 to 400 ft on centers along drainage pipes, at all intersections and at all changes in grade. Fig 4 shows various types of drainage structures. They may be of any desired shape and may be constructed of brick, monolithic concrete or concrete block. Similarly the covers or gratings may be of wood, steel, cast iron or concrete and can be made in any desired shape. Manholes are provided with solid covers where they are employed only for maintenance and inspection purposes. The size of the structure below grade should be adequate (4 ft dia) to permit the use of cleaning implements.

The main difference between a catch basin and an inlet manhole is that a catch basin has a sump, usually 18 in. minimum, below the bottom of the effluent pipe. The purpose of this sump is to catch the silt that is washed in from



Drawing by Sol Erlich

the surface of the ground before it gets into the drain line.

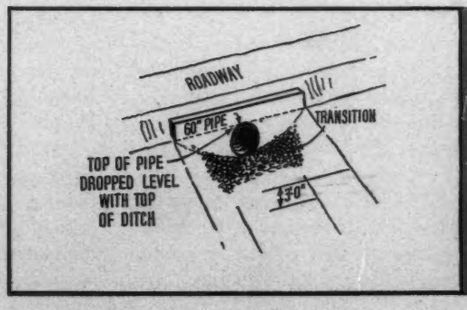
The use of catch basins is not recommended since sewers are now designed with self-cleaning velocities capable of carrying along all matter that is washed in, and since catch basins are usually poorly maintained. There are times, however, when shallow sumps, say 4 to 12 in., are desirable. For instance, water dropping a long distance through a drainage structure tends to erode the invert. A shallow sump assures a water cushion which protects this invert.

Drainage to Kill Mosquitoes

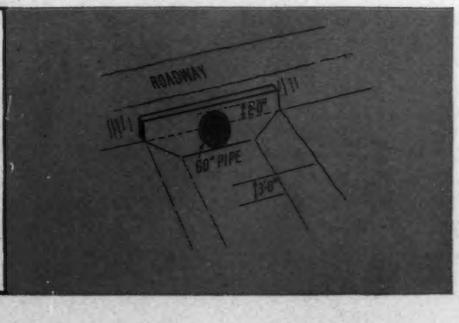
Drainage is one way employed in destroying certain mosquitoes. Mosquitoes all pass through the larval stage which takes approximately 7–10 days for development. The larvae develop in still water; therefore, it is usually sufficient to see that the water drains off in less than one week in order to kill the larvae. Another method that has been successful in larvae eradication is to raise the pool level a few feet relatively quickly and thus drown the larvae.

These figures again demonstrate how it might be possible to choose a correct pipe size and ditch laid to correct grades and still have flooding. At right, the ditch is theoretically oversized, but if the pipe flowed full, the ditch would be overtopped by 2 ft. Rocks shown in sketch, left, prevent erosion at transition section

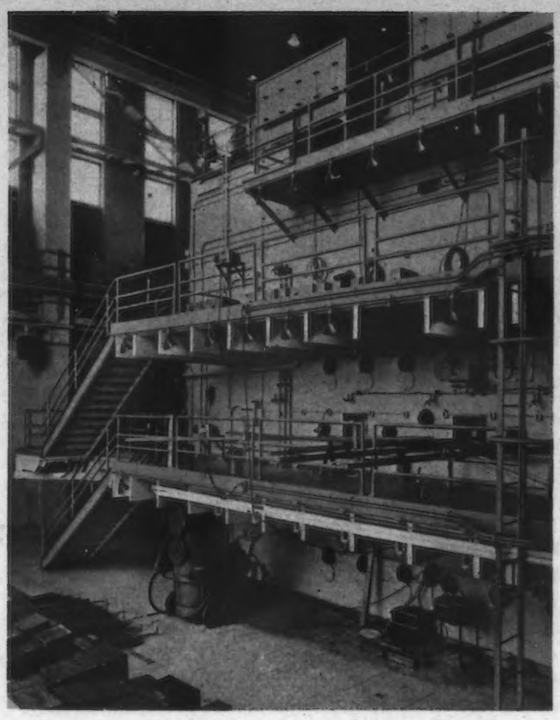
RIGHT — FIG. 7



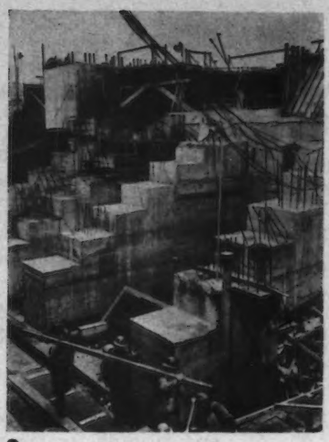
WRONG — FIG. 8



The author appreciates the help of R. A. Freeman in preparation of drawings



1



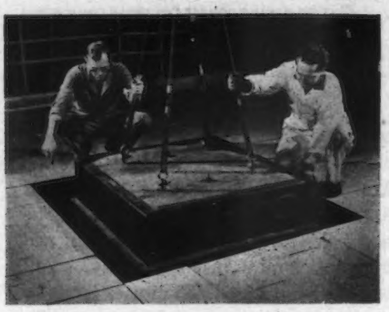
2

Brookhaven National Laboratory Photos



3

1. Face of the atomic pile, showing ports into which materials are inserted. 2. Buttresses for pile foundation. 3. Inside view of air duct to cool pile. 4. Removing concrete plug from the pile



4

CONSTRUCTION PROBLEMS OF AN ATOMIC LAB

Brookhaven National Laboratory, Upton, N. Y.

H. K. Ferguson Co., Design and Construction

IN THE CONSTRUCTION OF BUILDINGS to house atomic processes, common concepts of material selection and structural requirements must be tossed out the window.

Some idea of the complexities of design can be gained from an acquaintance with the construction problems in building the nation's newest atomic reactor at Brookhaven National Laboratory, Upton, N. Y., first reactor ever built exclusively for research.

The Brookhaven reactor consists of a giant cube of graphite penetrated by a rectangular array of parallel holes carrying uranium metal rods. Its primary purpose is to produce neutrons for studies on the nature of neutrons themselves, and on substances exposed to them.

The Graphite Cube

The cube is composed of 60,000 pieces of graphite stacked like building blocks. There are 2600 different sizes and shapes. The "stacking" is accomplished by a complicated keying system, in which every piece is keyed once or twice. No bonding agent could be used as it would have made the process unworkable.

Shielding

The pile shield which encases the graphite cube on all sides to protect personnel from radiation, is constructed of a special type of concrete, several ft thick, and steel plate ranging in thickness from 9 to 18 in. The steel is used structurally as well as protectively.

The heavy steel plate was obtained from surplus in the Panama Canal Zone, and was fabricated by the New York Naval Shipyard in sections weighing approximately 10 tons each.

Cooling System

Air cooling was chosen to remove the tremendous heat generated within the pile because of its simplicity, reliability and stability. Heavy duty centrifugal compressors eject the heated air at the rate of several tons a minute from the stack. The inlet air is filtered to remove dust which might become active while passing through the reactor, or might lodge within the graphite structure. The heated air is again filtered on leaving the reactor to remove activated particles originating within the structure.

The heated air is released 350 ft above the surrounding country. By maintaining a meteorological station and a number of radiation monitoring stations, it will be possible to insure that surrounding areas will be safe.

A secondary cooling system was installed around the concrete ducts to prevent impairment of concrete strength and life which might result from the high temperature of exhaust gases leaving the pile.

Foundation Problems

The nature of the pile and the method of assembling the graphite required prediction of settlement and tilting of the foundation within very close tolerances. Weight of the pile is so great that it caused stresses of more than 1 ton per sq ft at a depth of 100 ft below the footing. The total weight of the pile (about 40 million lb including the foundation) produces a soil pressure of 6500 lb per sq ft under the footing.

Fire-Resistant Roofs For Row Houses

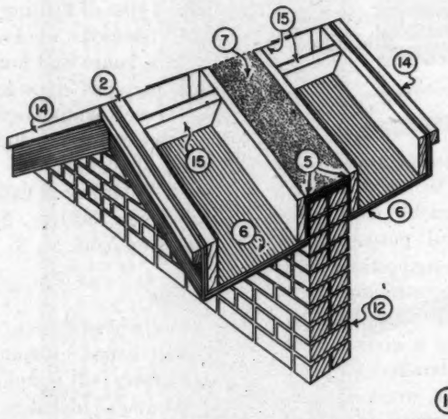
A method of constructing continuous fire-retardant roof decks, spanning two or more row houses separated by two hour masonry walls, has been developed by the Engineering Committee of the Asphalt Roofing Industry Bureau. The method is approved by the Dept. of Public Works of the City of Baltimore.

The design is said to eliminate protruding parapets at party walls, to permit use of fire-resistant asphalt shingles, and to promote economical construction.

As shown in the drawings below, the fire-resistant roof construction extends on both sides of the party wall to include the second rafter (2) from the wall. Space between the rafters is enclosed with two thicknesses of ½-in. gypsum board (6), separated by 20 ga. 1-in. mesh galvanized poultry netting. The time temperature rating of this construction is 1 hour with wire mesh, 45 minutes without.

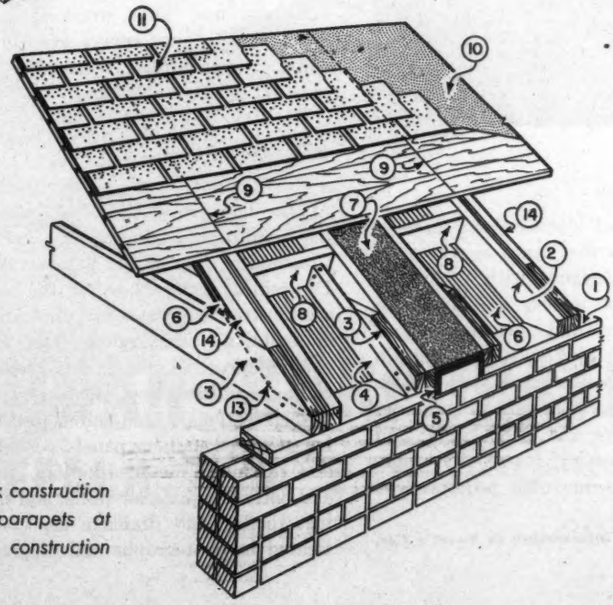
The roof deck itself is designed so that if fire should cause the roof to collapse, it will fall at or beyond the second rafter from the party wall. This is achieved by ending all roof boards over the center of the second rafter on each side of the party wall (9). A 2 by 2 in. fulcrum (14) nailed to the second rafter facilitates failure at the desired place in the event of fire.

The gypsum board between the first two rafters is claimed not to fall when the roof collapses, but to remain in place and serve as a deflector to prevent flames from jumping over the party wall to adjacent dwellings. Asphalt Roofing Industry Bureau, 2 W. 45th St., New York, 18, N. Y.



LEGEND

1. Plate
2. Rafter
3. Ceiling joist
4. Nailing block for gypsum board
5. Resilient incombustible fill between rafter, masonry
6. Two layers ½-in. gypsum board
7. Incombustible resilient fill to 1½ in. min. depth
8. Fire stop header, full depth of rafter. Space between header (8), rafters (2), and plate (1), to be filled with a light-weight incombustible fill
9. Roof boards end over second rafter
10. No. 15 asphalt saturated felt
11. Asphalt shingles
12. Two hour masonry party wall
13. Three 20d common nails 1½ in. above lower rafter edge
14. 2 x 2 in. fulcrum member
15. Header to provide secure nailing for gypsum board



The details at right and above show base and peak construction for continuous fire-retardant roofs eliminating parapets at party walls, and promoting more economical construction

Electric Dehumidifiers

• The "*Sahara*" is a new electric dehumidifier, designed for home and commercial use. The unit, says the manufacturer, removes from two to three gallons of water from up to 10,000 cu ft of closed area in a 24-hour period. The unit requires no chemicals. Action is accomplished by drawing warm air into the system where it passes over cold metal coils containing freon-12. When the water vapor in the air condenses, it drains into a container or permanent drain. Operating on 115 volts, 60 cycles AC, the machine is one ft sq by 33 in. high, and weighs 55 lb. Mitchell Manufacturing Co., 2525 North Clybourn, Chicago, Ill.

• The *Moisture Magnet* is a portable, electric dehumidifier, designed for use in damp basements, locker rooms, printing

(*Continued on page 184*)

LITERATURE FOR THE OFFICE



Above: booklet presents new model desks for schoolroom use. The units, shown below, are pedestal type, movable



School Desks

Bargen Staput-Movable Pedestal Desks. Brochure describes various types of school desks designed with a movable pedestal. Eight models are illustrated and basic design and construction data are included in addition to variations in seat styles, book storage space, work tops, etc. Diagrams indicate required space for junior and senior sizes; and photos show sundry classroom arrangements using the movable, pedestal type desk. 8 pp., illus. Bargen-Built Industries, Inc., 625 Bryant Ave., No., Minneapolis 11, Minn.

Garbage Disposers

The Use of General Electric Disposalls on Private Septic Tank Systems. Booklet gives full details on how a private system can be used for handling both household sewage and fresh food wastes. Functions of a septic tank are discussed as well as design requirements for new or existing septic tanks which are to serve a disposer. Recommendations on capacity, location, etc., are given, and data on soil absorption systems is included. A list gives sources for further reference. 8 pp. General Electric Co., Bridgeport 2, Conn.*

Circuit Breakers

Non-Enclosed, General Purpose Circuit Breakers (Bulletin No. 3410). Booklet describes fully magnetic non-thermal, non-enclosed, general purpose circuit breakers. These coil connections are included: terminal construction, series overload, calibrating tap, shunt trip and relay trip. Data is given on one-, two- and three-pole breakers for general industrial use. Time overload curves and coil resistance curves are also included. 12 pp., illus. Heinemann Electric Co., Trenton 4, N. J.

Stainless Steel

Architectural Uses of the Stainless Steels. The pamphlet is a reference for architects, engineers and builders to technical data on the stainless steels. Diversified applications of the metal are illustrated in extensive photographs of buildings, installations, etc. Parts available in stock are shown. These include stainless steel fasteners, roll formed sections, round and shaped tubing, textured stainless panels, perforated and expanded metal. Interiors, fronts and entrances, exterior walls, and flashing, roofing and drainage aspects are treated in photographs and diagramed details. Specifications for various types of stainless steel are given, as well as tips on construction. 32 pp., illus. The Committee of Stainless Steel Producers, American Iron and Steel Institute, 350 Fifth Ave., New York 1, N. Y.

Lighting and Decoration

Contemporary Lighting in Modern and Traditional Interiors. Report, written in layman's language, deals with adequate lighting as combined with interior decoration techniques. All periods are covered, from Colonial and Early American through Victorian and Modern, and all rooms of the home except kitchen and bath. Types of lighting treated include: cove, recessed, window, wall, ceiling fixtures, lamps and fluorescent.

Photographs show interiors and details of each lighting technique are given. Glossary of terms included. 64 pp., illus. Price, $1.00, quantity prices upon request. Publications Office, Illuminating Engineering Society, 51 Madison Avenue, New York 10, N. Y.

Piping

One Hundred Years of Piping Progress. Booklet issued to commemorate 100th anniversary of founding of Grinnell Corporation. Included are: history of the organization, typical products, interiors of plants and warehouses, and typical installations. Details are given on pipe fittings hangers, valves, prefabricated piping and unit heaters. 26 pp., illus. Grinnell Corp., 260 W. Exchange St., Providence, R. I.

Church Equipment

Pews, Pulpits, Rails, Screens. Brochure shows many styles of pews, over 48 types of pew ends, chancel sets and accoutrements including pulpits, communion tables, lecterns, chairs, dossal curtains, etc. All are shown in detailed diagram. Furniture dimensions are listed. 32 pp., illus. Carondelet Mfgr. Co., 5826 South Broadway, Dover to Elwood St., St. Louis, Mo.

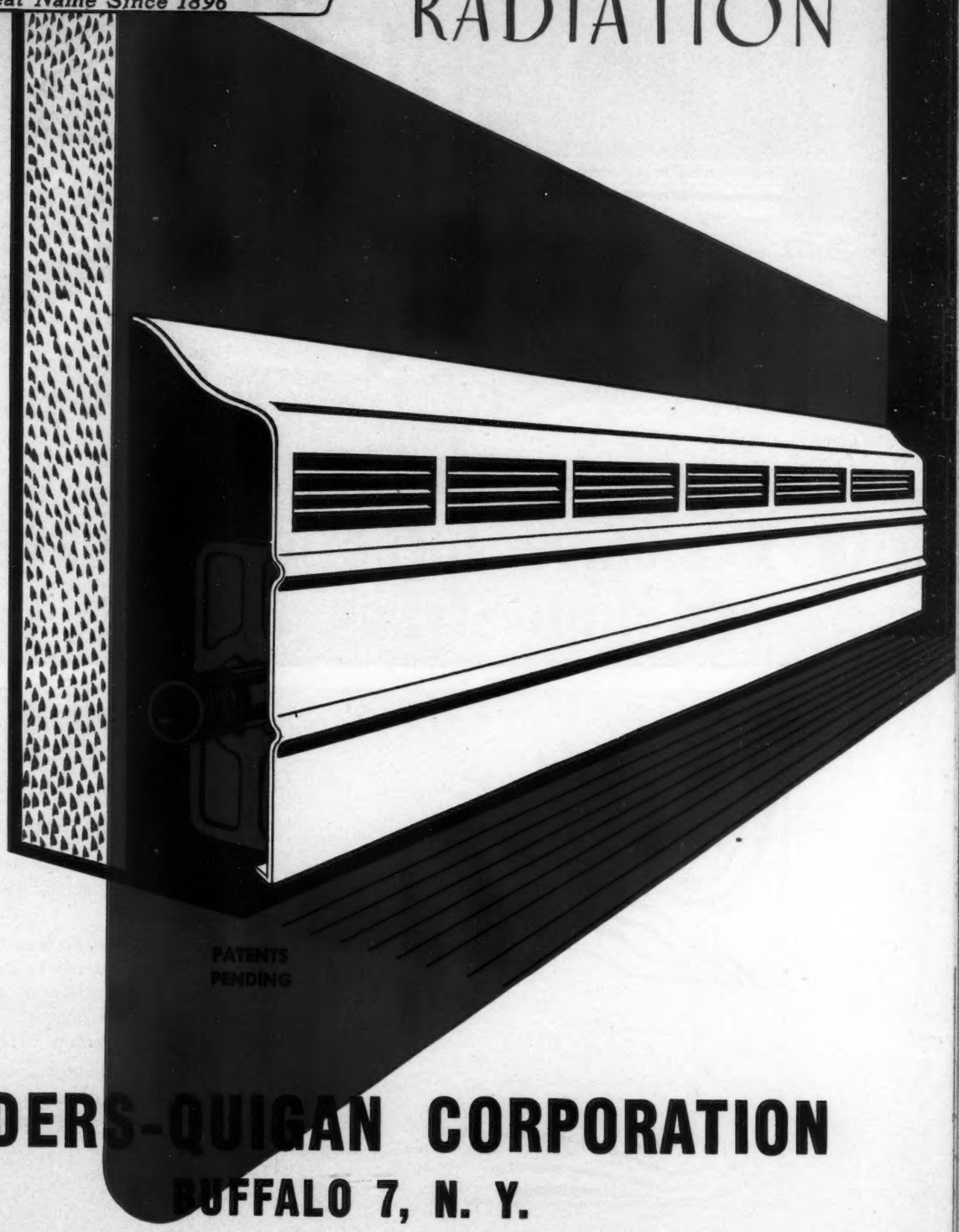
(*Continued on page 214*)

** Other product information in Sweet's File, 1951.*

fedders

A Great Name Since 1896

BASEBOARD RADIATION

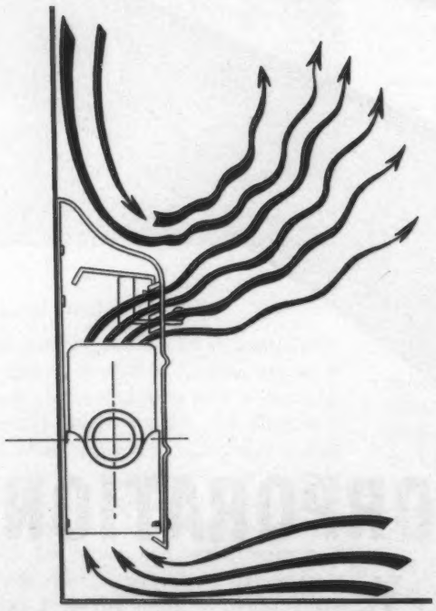


FEDDERS-QUIGAN CORPORATION

BUFFALO 7, N. Y.



With Exclusive Directional Louvers and Anti-Streak Covers



fedders

EXCLUSIVE DESIGN REDUCES STREAKING OF WALLS

Diagram shows how the warm air is directed into the room by Fedders built-in angular louvers in front face of enclosure.

Also see how cool air flows down from the wall and is directed out into the warm air stream by means of curved top enclosure. These Fedders features greatly reduce streaking of walls and draperies, as well as contribute to uniformity of temperature from floor to ceiling.

Dramatic tests using finely divided powdered charcoal have been made in which the laboratory wall was coated with oil. No deposit of the charcoal powder clung to the oiled surface.

FEDDERS-QUIGAN CORPORATION, BUFFALO 7, N. Y.

fedders BASEBOARD RADIATION

DECORATIVE HARMONY

Covers are finished in neutral primer coat ready for finishing on the job to conform to any decorative scheme whether it be solid color, pastel or grained treatment.

CLEANLINESS

Heated air is directed away from walls by means of exclusive die-formed louvers, thus contributing to cleanliness and reducing cleaning and redecorating costs. Smooth surface of cover is easily dusted.

EASY INSTALLATION

Available in two types of flush or semi-recessed installations. Brackets, heating elements and covers are designed for quick, easy installation. Two-piece back is specially designed for good plastering practice. Fedders Baseboard Radiation can be completely installed as soon as rough flooring is laid. No delays, —not dependent on carpenters' finishing schedule.

APPLICATIONS

Architects, interior decorators and owners are finding Fedders Baseboard Radiation an attractive and efficient means of heating for homes, apartments, offices, hospitals, churches and institutions. It can be used in new or remodeling work,—semi-recessed or flush mounted.

LAYOUT ADVANTAGES

Fedders Baseboard Radiation occupies little more space than ordinary baseboards. It makes all floor space useable and eliminates bulky radiators under windows. There is no interference with location of furniture or hanging draperies. Particularly well suited for use with picture windows.

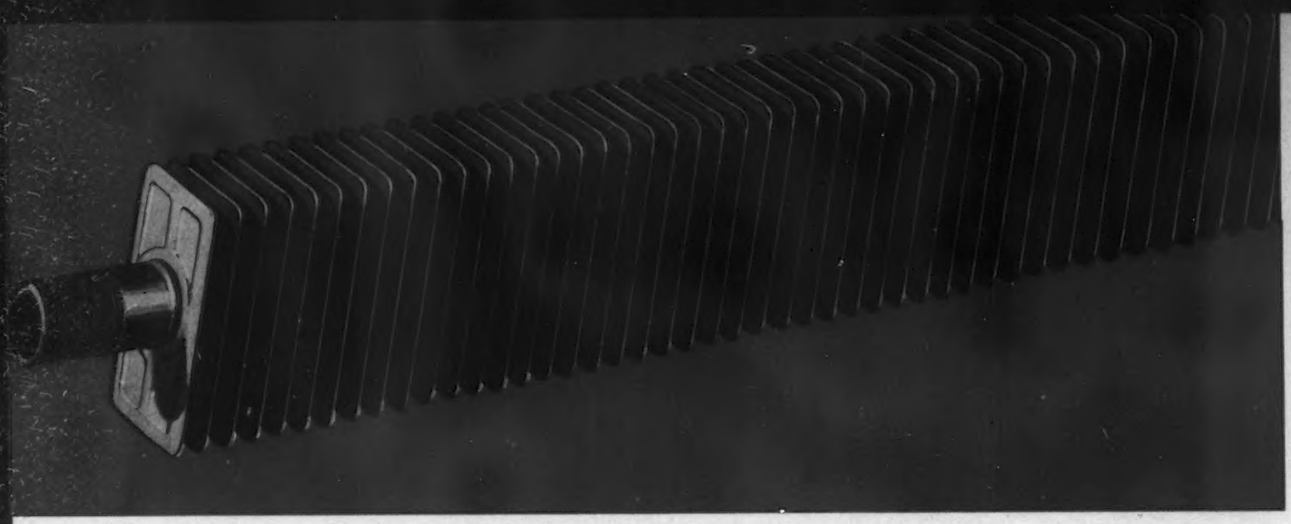
HEATING COMFORT

Uniform rather than spot distribution of heat—provides comfort in all parts of the room. No hot spots —no cold spots. Convector-type covers activate circulation of heat thus providing more uniform temperatures from floor to ceiling, eliminating cold, drafty floors.

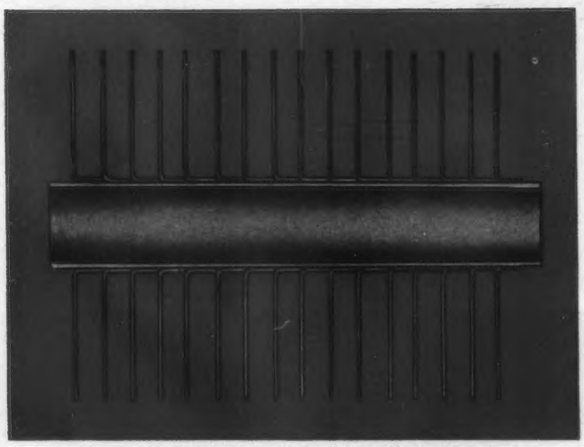
DAMPERS

Dampers (Patent Pending) are optional. They may be installed with the original job or can be purchased and installed at a later date. No dangling chains. A simple lever operates the damper for open or closed positions depending upon the occupants' comfort. Dampers reduce the overall job cost as they eliminate by-pass connections and expensive valves.





fedders Heating Elements Designed for Permanent Efficiency



Showing uniformly spaced die-formed fins of heating element. Note collared holes for maximum heat transfer from tube to fins.

HEATING ELEMENT

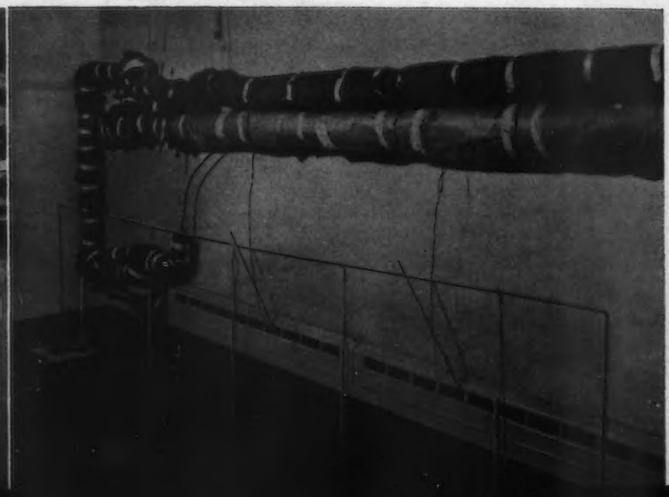
Heating element is made of cold drawn, seamless steel pressure type tubing with steel fins. Tube is bullet expanded into self-spacing, die-formed collared fins providing large area permanent metal-to-metal contact for efficient heat transfer. Die-formed pattern adds turbulence and scrubbing action to air flow plus added fin strength. Heating elements act as mains, thereby simplifying basement installations with consequent economy in piping. Cutting and threading on the job is reduced to a minimum. Heating elements are made in lengths from 2 ft. to 12 feet in 4" increments. Tubing available in 1" and 1¼" standard pipe sizes.

COVER LENGTHS

Furnished in sixteen lengths. Joining strips, end covers and corners available to suit installation requirements.

Showing Part of Test Set-Up at Fedders-Quigan Corporation.





ARCHITECTS' SPECIFICATIONS

fedders

HEATING ELEMENT—shall consist of seamless steel tubing, ASTM Specifications applicable thereto. Capable of withstanding hydraulic test of 1000 p.s.i. Fins shall be die-cut, uniformly self-spacing, embossed, plate type, mechanically bonded to steel tubing. Elements shall be finished with one coat of rust-resistant paint capable of withstanding standard salt spray test of a minimum of 75 hours.

COVERS—shall have integral die-formed directional louvers. Top shall have a reverse O.G. curve with radii of 2⅛". Cover shall have integral one-piece front with die-formed ribs extending entire length. Lower edge of front cover shall be flanged inwardly at an acute angle to eliminate exposed sharp edge. Cover shall be given one coat of rust-resistant paint inside and out, capable of being covered with any type of finish coat. Prime coat must also withstand standard salt-spray test of a minimum of 75 hours.

ELEMENT SUPPORTS—must perform the dual function of adequately supporting the element and spacing the front cover. Supports must also position the element so that fins are not in contact with front and back plate. Supports shall be coated with one coat of paint identical with that used on element.

ALL JOINING STRIPS—as well as corners and end covers must overlap the main enclosure.

DAMPERS—shall be of the removable type, lever operated.

HOW TO ORDER fedders BASEBOARD RADIATION

1. **ELEMENT**—*Specify* the pipe diameter. (1" or 1¼" diameter). *Specify* individual lengths required. Elements are made in lengths from 2 ft. to 12 ft. in 4" increments. If the run of element is greater than 12 ft., specify the actual length of each element required. Allowance must be made for expansion, couplings, ells, and miscellaneous fittings.

2. **ELEMENT SUPPORT**—*Specify* the number of supports required and the length of pipe. It is recommended that a minimum of 2 supports be used up to 6 ft. Over 6 ft., use one support every 3 ft.

3. **RECESSED OR FLUSH INSTALLATION**—*Specify* if installation is recessed or flush.

4. **BACK PLATE**—*Specify* the number of back plates required and if the job is to be recessed or flush. This part is made in 4 ft. lengths only. Order number of back plates in relation to the front cover, corners, end caps, and joining strips. Cut odd lengths to suit at time of installation.

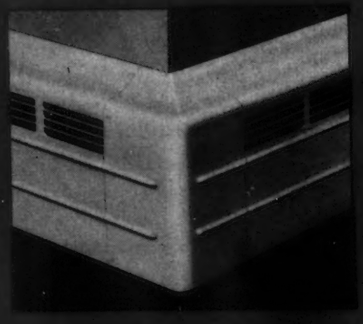
5. **HANGER STRIP**—*Specify* the number of hanger strips required. (This part is made in 4 ft. lengths only.) Order sufficient pieces to support the entire front cover, corners, end caps, and joining strips. Cut odd lengths to suit at time of installation.

6. **INSIDE AND OUTSIDE CORNERS**—*Specify* the number of each required. (Corners are designed to overlap front cover by a maximum of 2¾".)

7. **FRONT COVER**—*Specify* the number and length in feet and inches to nearest 4" beyond the required length. The covers are made in 4 inch increments from a minimum of 2'-⅜" to a maximum of 7'-⅜".

8. **END PLATE AND END COVER**—*Specify* the required number of each part and also right hand or left hand. The end cover can overlap the front cover by a maximum of 2¾ inches.

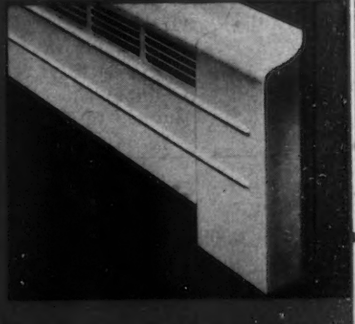
9. **JOINING STRIP**—*Specify* the required quantity. (The joining strips are designed to give an overlap on each front cover of ⅜ inches.)



Showing neat, easily applied outside corner piece for Fedders Baseboard Radiation.



Showing convenient lever operated damper for individual control of room temperature.



Close-up showing end cover and plate applied next to door jamb.

forced hot water

1"

Average Water Temp. (°F)	Btu/hr per ft. of Finned Length
170	373
175	397
180	422
185	446
190	472
195	497
200	522
205	547
210	572
215	597

1¼"

Average Water Temp. (°F)	Btu/hr per ft. of Finned Length
170	573
175	612
180	649
185	688
190	726
195	765
200	803
205	841
210	880
215	919

Steam (based on 1 lb. steam and 65° entering air)
1 "—597 Btu/hr (2.5 square feet) per lineal foot
1¼"—919 Btu/hr (3.8 square feet) per lineal foot

Friction of Standard Fittings
in equivalent feet of pipe

Type of Fitting	Iron Pipe						Copper					
	¾"	1"	1¼"	1½"	2"	2½"	¾"	1"	1¼"	1½"	2"	2½"
Elbows:												
90°	1.56	2.08	2.60	3.12	4.17	5.22	1.56	2.08	2.60	3.12	4.17	5.22
45°	1.09	1.46	1.84	2.18	2.92	3.66	1.09	1.46	1.84	2.18	2.92	3.66
90° Long Sweep	0.78	1.04	1.30	1.56	2.08	2.61	0.78	1.04	1.30	1.56	2.08	2.61
Tees:												
100% Side Outlet	2.81	3.75	4.68	5.62	7.50	9.40	1.90	2.50	3.12	3.74	5.00	6.25
50% " "	6.25	8.32	10.40	12.48	16.70	20.90	6.25	8.32	10.40	12.48	16.70	20.90
25% " "	25.00	33.30	41.60	50.00	66.70	83.60	31.20	41.60	52.00	62.50	83.40	104.4
Valves:												
Globe—Full Open	18.70	25.00	33.80	36.75	50.00	62.80	26.60	35.40	44.20	53.00	70.80	88.60
Gate— " "	0.78	1.04	1.30	1.56	2.08	2.61	1.09	1.46	1.82	2.18	2.92	3.66
Stop Cock " "	1.56	2.08	2.60	3.12	4.17	5.22	1.56	2.08	2.60	3.12	4.17	5.22
Angle— " "	3.62	4.16	5.20	6.24	8.34	10.44	4.70	6.25	7.80	9.36	12.51	15.66
Reducer Coupling	0.63	0.83	1.04	1.25	1.67	2.09	0.63	0.83	1.04	1.25	1.67	2.09
Boiler	4.68	6.25	7.80	9.36	12.51	15.66	6.26	8.32	10.40	12.50	16.70	20.90

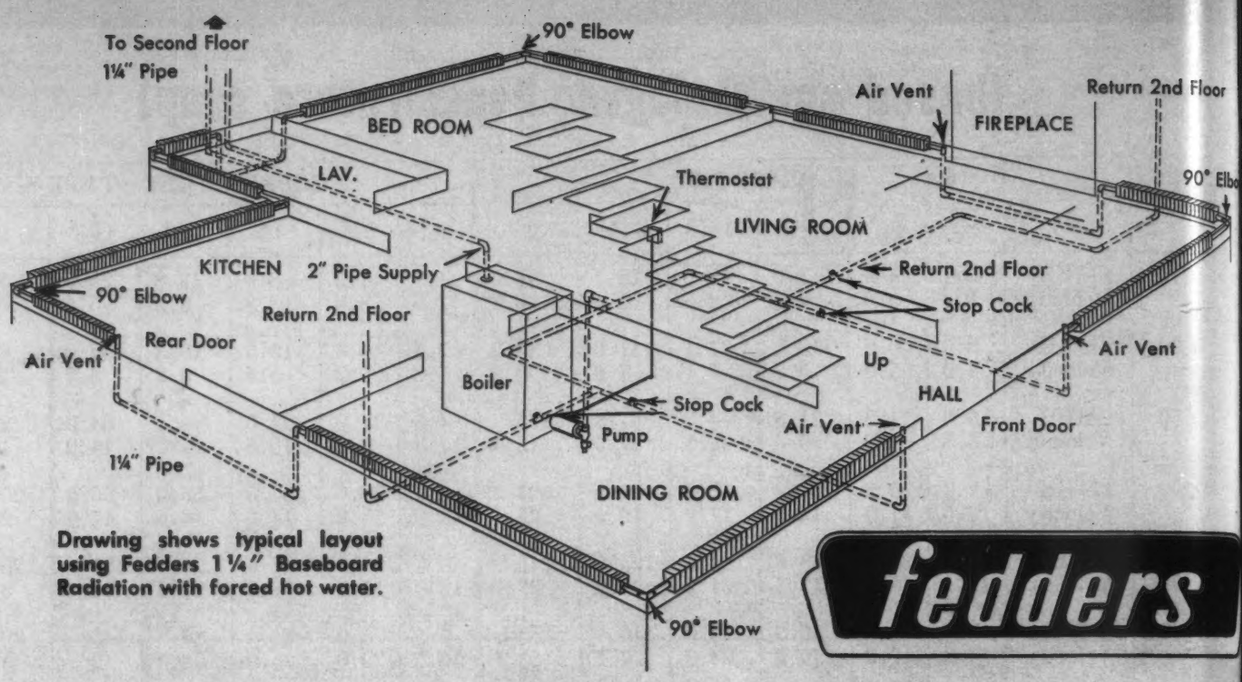
Fedders HEAT CARRYING CAPACITY

(based on 20 degree temperature drop)

Friction Per Ft.		IRON PIPE						COPPER TUBE—TYPE L					
		½"	¾"	1"	1¼"	1½"	2"	½"	¾"	1"	1¼"	1½"	2"
10	MBH	2.1	4.8	8.9	18.5	28.1	54.6	1.7	4.3	8.0	12.8	25.5	54
	Velocity	2.9	3.6	4.1	4.8	5.4	6.3	2.9	3.5	3.8	4.2	5.4	6.7
20	MBH	3.3	6.9	13.0	27.1	41.0	80.2	2.5	6.4	12.5	19.8	38.0	80
	Velocity	4.0	5.0	5.7	7.1	7.6	9.2	4.2	5.2	5.8	6.2	8.2	10
50	MBH	5.3	11.2	21.5	44.7	67.8	133	4.3	11.0	24.0	35.5	64.0	138
	Velocity	6.8	8.0	9.5	12.1	12.9	15.1	7.3	9.0	10.5	11.0	14.0	16.5
100	MBH	7.7	16.3	31.2	65.3	99.1	194	6.4	16.6	34.5	55.0	96.0	200
	Velocity	9.6	11.9	14.0	17.2	19.0	22.1	11.0	13.0	15.6	16.5	17.0	24
150	MBH	9.6	20.5	38.8	81.6	125	245	8.1	20.6	41.9	75	121	250
	Velocity	12.1	15.1	17.1	21.2	23.2	28	13.0	17.1	18.8	22.2	24	31
200	MBH	11.3	24.0	45.5	96.0	146	285	9.5	25.0	54.0	86.0	145	300
	Velocity	14.0	17.0	20.2	24.9	27.2	33.1	16.5	20.0	25.0	26.0	42	37
300	MBH	14.0	29.9	56.5	118	182	356	12.0	32.0	63.5	114	180	376
	Velocity	18.1	20.9	25.0	31.1	34.2	40.9	19.2	23.0	31.0	34.5	40	47
400	MBH	16.1	34.8	66.3	140	211	418	14.2	37.0	74.0	135	205	490
	Velocity	21.2	26.0	30.1	36.2	40.1	48.2	24.0	29.5	35.0	40	45	53
500	MBH	18.4	39.1	74.8	159	239	472	16.1	42.0	83.0	155	245	540
	Velocity	23.0	29.1	32.9	41	45.1	53.9	28.0	34.0	39.0	45	52	60
600	MBH	20.2	43.1	82.4	175	263	522	18.1	46.0	94	169	272	560
	Velocity	26.1	31.9	37.1	45.1	49.8	60.2	30.0	38.0	45	50	58	68
700	MBH	21.6	47.2	90.0	191	29.3	57.6	19.5	51.0	120	190	295	605
	Velocity	28.0	35.1	39.2	49.0	54.1	65.1	35.0	41.0	54	57	62	72
800	MBH	23.7	50.7	96.6	204	310	613	22.0	55.0	130	205	320	655
	Velocity	30.0	37.0	43.1	52.1	58.8	71.0	37.0	45.0	58	62	68	80
900	MBH	26.0	54.8	100	220	348	652	25.0	59.0	142	225	345	700
	Velocity	33.0	39.2	44.9	56.0	63.0	74.3	40.0	48.0	63	67	74	85
1000	MBH	28.6	58.0	111	242	360	695	28.0	63.0	155	240	365	740
	Velocity	35.0	41.0	49.0	59.0	66.0	79.0	43.0	52.0	68	72	78	90
1500	MBH	33.0	70.0	147	293	435	852	32.0	80.0	200	335	470	960
	Velocity	42.0	57.1	60.0	74.1	83.0	99.0	56.0	64.0	88	93	100	115
2000	MBH	39.0	83.2	162	330	513	1010	37.0	95.0	245	380	560	1115
	Velocity	50.2	59.8	71.0	86.2	97.0	116	65.0	77.0	105	110	115	135

Notes: Friction is in Milinches. 12,000 Milinches equals 1 foot of water pressure.
Velocity is measured in inches per second.
MBH equals thousands of Btu/hr.
For 10° Temp. Drop, the MBH is one half the amount shown for the same velocity and friction.

How to lay out a fedders Hot Water Baseb



Drawing shows typical layout using Fedders 1¼" Baseboard Radiation with forced hot water.

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The following method has been accepted for many years as the best design and engineering procedure to follow when estimating, laying-out, and specifying Fedders Baseboard Radiation. Do not use "shortcut methods" for calculating and layout.

1. **HEAT LOSS**—Calculate the hourly B.T.U. heat loss for each room. Use standard methods as recommended by leading heating engineers and societies. This heat loss is the amount of heat that will be required from the system to maintain the inside design temperature. To simplify the calculations, convert this loss to thousands of B.T.U. per hr. (M.B.H.) by dividing by 1,000. Thus, if the hourly heat loss of a room is 7,500 B.T.U., 7.5 M.B.H. will be required from the system.

2. **SYSTEM LAYOUT**—Make a sketch to scale for the entire system. Show the boiler location and indicate all the auxiliary equipment such as pump, compression tank, relief valve, automatic feed, etc. Locate all cocks and control valves. Add sizes and indicate lengths. Locate the Fedders Baseboard Radiation to blanket as much as possible the outside walls. A two circuit system is commonly used with a centrally located boiler.

3. **WATER TEMPERATURE**—Divide the heat loss for each room by the wall space available for Fedders Baseboard Radiation. Consult the Capacity Chart, page 6. The average temperature to use is obtained from the largest loss per foot of available wall space. Thus, in a room where the total B.T.U. is 13.0 M.B.H. and the available wall space for the Fedders Baseboard Radiation is 20 lineal feet, a B.T.U. per foot of 13.0 ÷ 20 = 650 is required. By consulting the Capacity Tables, it will be found that the 1¼" element with an average water temperature of 180° is required.

4. **WATER VELOCITY AND TEMPERATURE DROP**—Engineering tests have established that a water velocity in excess of 4 feet per second will present objectionable noise for the average home. Other engineering tests indicated that velocities less than 2 ft. per second provide relatively poor heat transfer. These tests also indicated that for a major circuit heat loss of less than 50 M.B.H., a 10° drop is advantageous, while for major circuits in excess of 50 M.B.H., a 20° drop is preferable.

5. **SIZING THE ELEMENT**—To correctly determine the required length of element for each room, divide the total heat loss of the room by the capacity per foot of length as determined in Step 3.

Baseboard Radiation System

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6. **SIZING THE CIRCULATOR**—The correct size of circulator is determined by the gallons per minute (G.P.M.) of water to be circulated and the friction loss of the system. The amount of water to be circulated is determined from the following formula

$$\text{G.P.M.} = \frac{\text{Hourly heat loss of building}}{10{,}000}$$

NOTE: 10,000 = 8.33 lbs. water per gallon x 60 min. x 20° F. drop.

The friction head is determined by the amount of water flowing (G.P.M.), the length and size of pipes including the elements, fittings, boiler, etc. for the largest circuit. The Friction of Standard Fittings Table at bottom of page 6 indicates the friction head of the various components of the circuit. A circulator is selected from the calculated G.P.M. and the friction head. The Typical Circulator Capacity Chart indicates the performance of one of many circulators.

7. **SIZING THE BOILER**—To properly size a boiler it is customary to add at least 10% for piping loss and pickup when using gaseous or liquid type fuels. For solid fuels, either hand or stoker operated, consult the boiler manufacturer.

8. **SPECIAL NOTES:**
   - A. Design the system to provide adequate drainage and air venting at all high points.
   - B. The so-called "long sweep" elbow is quite useful when it is necessary to drop down below floor level.
   - C. Do not exceed a straight run of over 30 feet unless provision has been made for expansion.
   - D. Keep the heating load on the individual circuits as near alike as possible.
   - E. Install stop cocks ahead of the circulator to provide balancing for each circuit.
   - F. Hold water velocities between a minimum of 2 feet and a maximum of 4 feet per second.
   - G. On large installations provide circulators for each zone with independent control.
   - H. Inspect the job during the installation period.

(Be sure to always specify diameter of element pipe and specify recess or flush installation)

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Water Pressure Drop in Milinches

(per foot at 20° drop)

PIPE SIZE	G. P. M.											
	1	2	3	4	6	8	10	15	20	25	30	40
¾″	40	150	310	500	1100	1900	2800	6000	10000	—	—	—
1″	12	48	95	155	340	590	880	1750	3100	4600	6600	10500
1¼″	3	11	25	42	90	145	205	460	690	1150	1700	2800
1½″	2	6	12	20	43	70	100	210	380	660	740	1200
2″	1	2	3	6	12	20	30	62	105	160	210	370
2½″	1	1	2	3	5	9	13	27	43	68	92	152

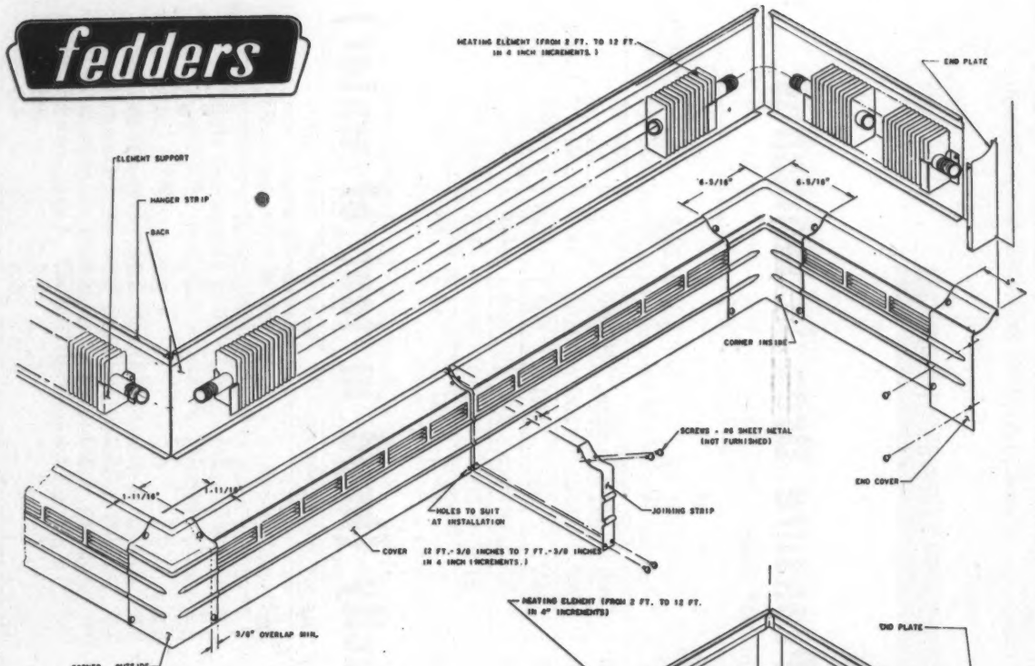
Typical Circulator Capacity (head in feet of water)

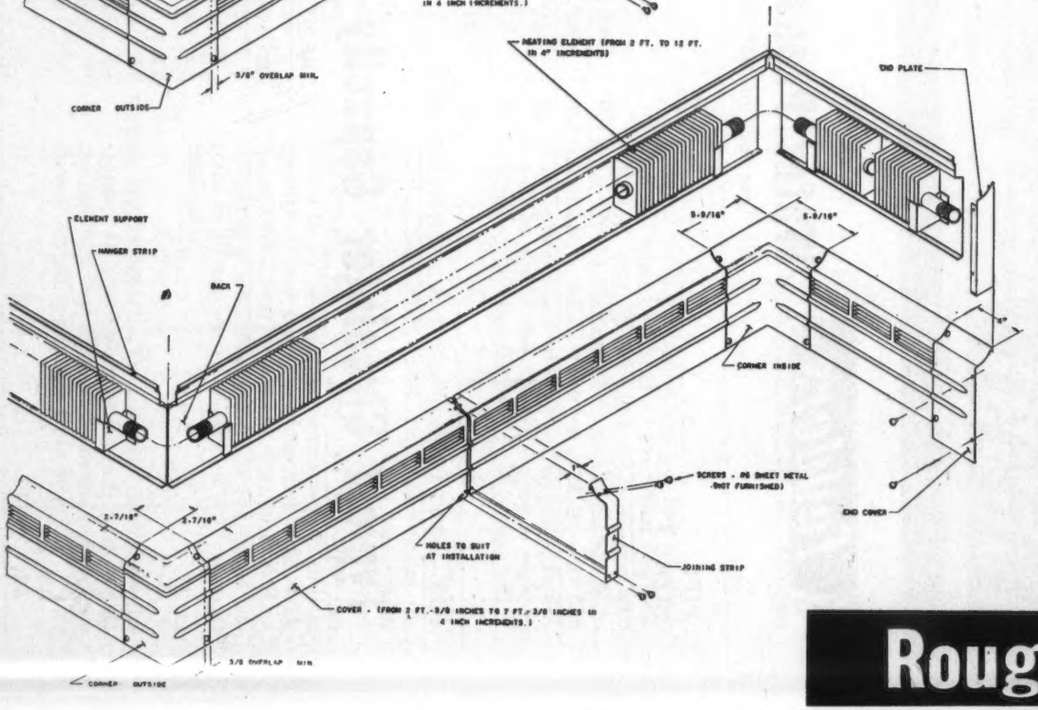
G.P.M.	CIRCULATOR SIZE					
	¾″	1″	1¼″	1½″	2″	2½″
5	5.1	6.3	7.2	7.7	9.1	9.2
10	4.3	5.4	6.9	7.4	9.2	9.3
15	2.6	4.3	6.3	7.2	9.2	9.3
20	—	2.5	5.2	6.7	9.2	9.3
25	—	—	3.8	6.0	9.0	9.1
30	—	—	2.2	5.2	8.8	9.0
35	—	—	—	4.0	8.6	8.8
40	—	—	—	2.4	8.2	8.6
45	—	—	—	—	7.4	8.3
50	—	—	—	—	6.5	8.0

Note: To convert Head in feet to milinches multiply by 12,000.

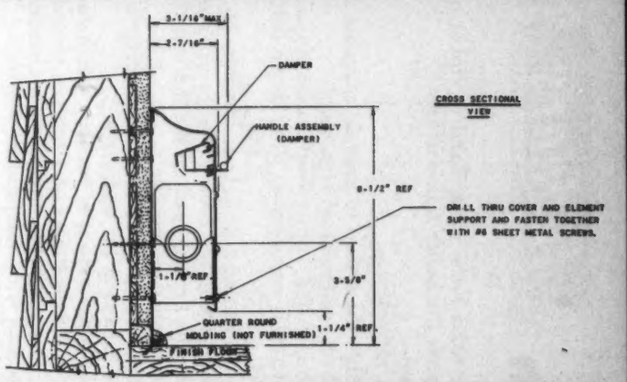
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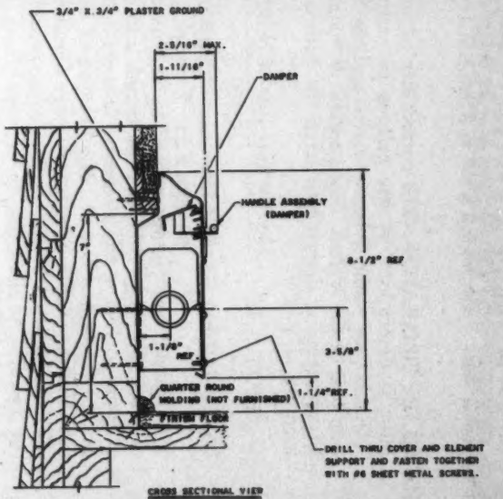




Flush Mounting
1" Diameter Pipe



Recess Mounting
1" Diameter Pipe



Roughing-in dimensions

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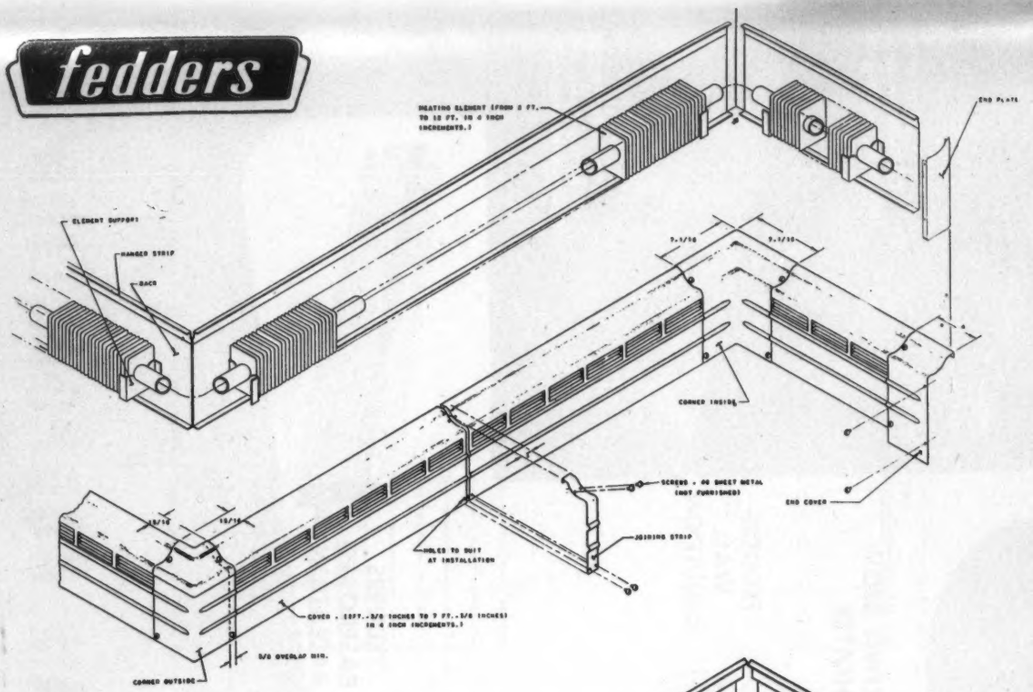
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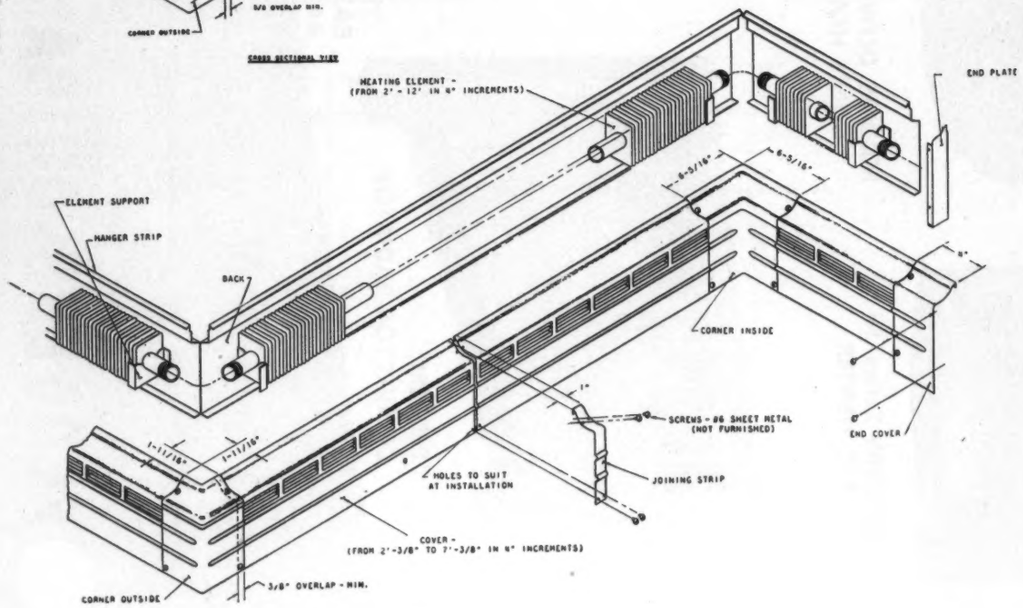
Flush Mounting
1¼" Diameter Pipe

Roughing - in dimensions

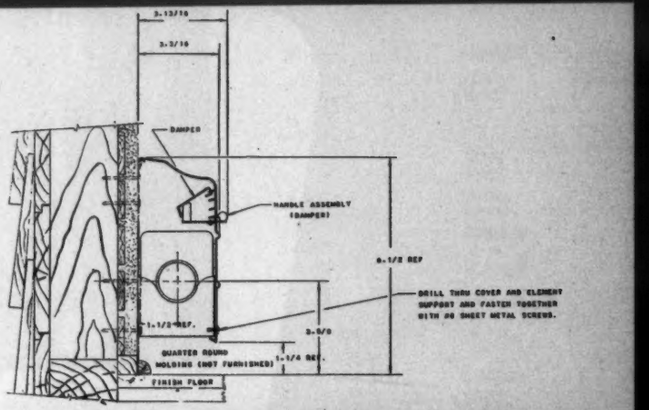
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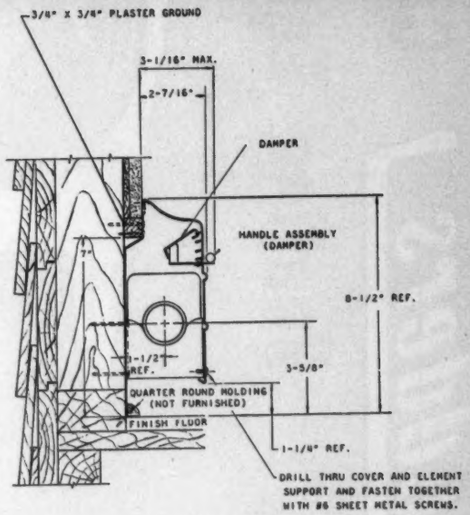
CROSS SECTIONAL VIEW



Flush Mounting
1¼" Diameter Pipe



Recess Mounting
1¼" Diameter Pipe

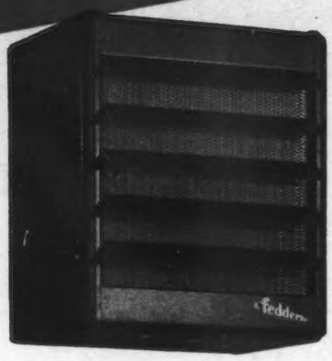


CROSS SECTIONAL VIEW

FEDDERS-QUIGAN CORPORATION, BUFFALO 7, N. Y.

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Complete Line of Heating Equipment



FEDDERS Series 15
UNIT HEATER



FEDDERS DOWN BLOW
UNIT HEATER

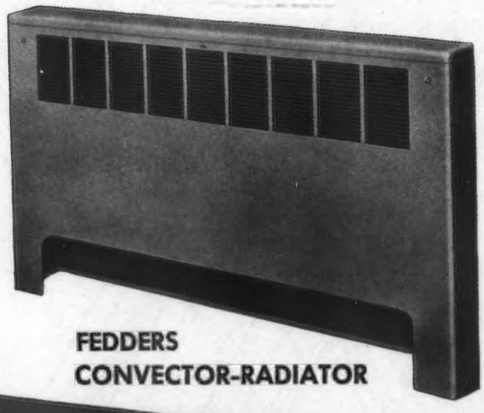


TYPE EM ENCLOSURE
fabricated from expanded metal.

TYPE FT EN-
CLOSURE having flat
top with die-cut grille.

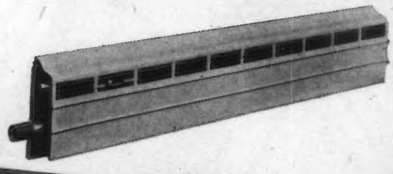
TYPE ST ENCLOSURE
having sloping top with
die-formed louvered grille.

FEDDERS
WALL
RADIATION



FEDDERS
CONVECTOR-RADIATOR

FEDDERS
BASEBOARD
RADIATION



The Fedders-Quigan policy is one of continuous improvement, and therefore the right is reserved to make changes without notice

FEDDERS-QUIGAN CORPORATION
BUFFALO 7, NEW YORK

MODULAR COORDINATION – 9: Frame Houses

Prepared with the cooperation of the Small Homes Council, University of Illinois

PLANNING AND DESIGNING of frame houses under the Modular Coordination system follows in general the precepts previously discussed for masonry construction. These sheets present some considerations for wood construction, together with methods used by the Small Homes Council of the University of Illinois and incorporated in their studies of the "industry-engineered" house.

The latter project combined use of Modular Coordination with pre-cutting and pre-assembling of frame members to study possible economies in small home construction. Substantial savings were indicated in material, and in time and labor for cutting and fitting. Platform type of framing is more easily adapted to standardization of modular details than braced or balloon frames, but the principles can be applied to any method. To achieve over all economies, some parts must be cut to fractional dimensions, but in any case, their placement is greatly simplified.

Standard sizes of wallboards for dry-wall construction, insulation bats, and plaster lath are all satisfactory for Modular Coordination. American Standard Yard Lumber Sizes are also convenient for use with the system. Lengths are generally available in 2-ft increments. Nominal stud sizes differ from actual dimen-

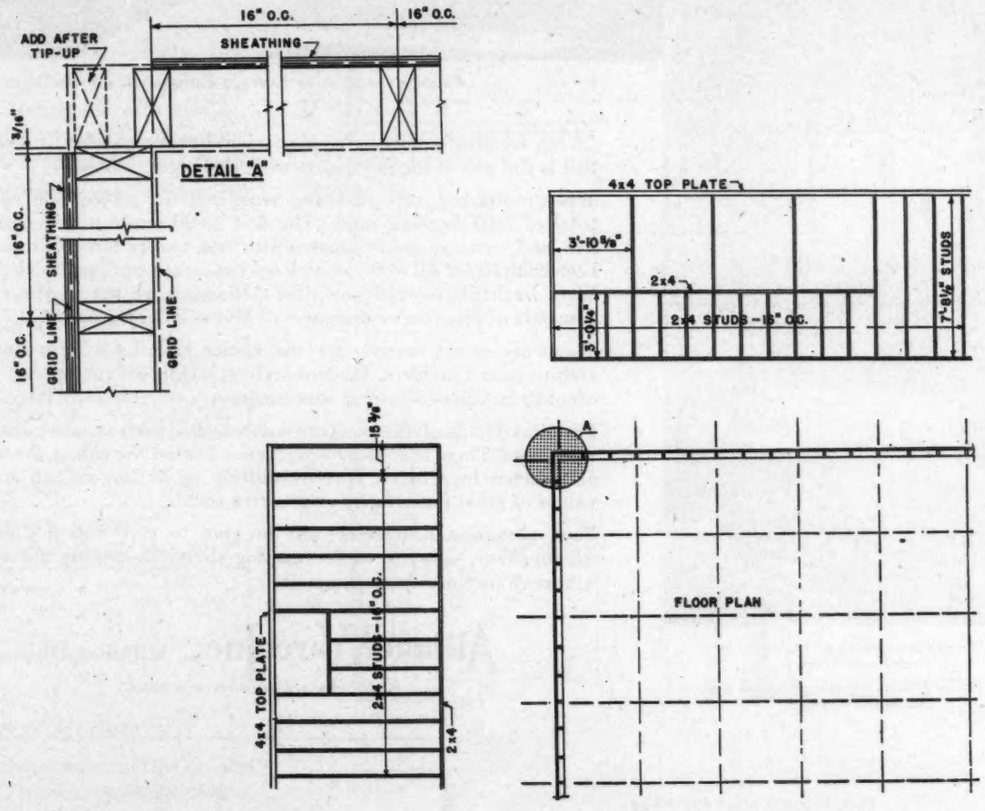
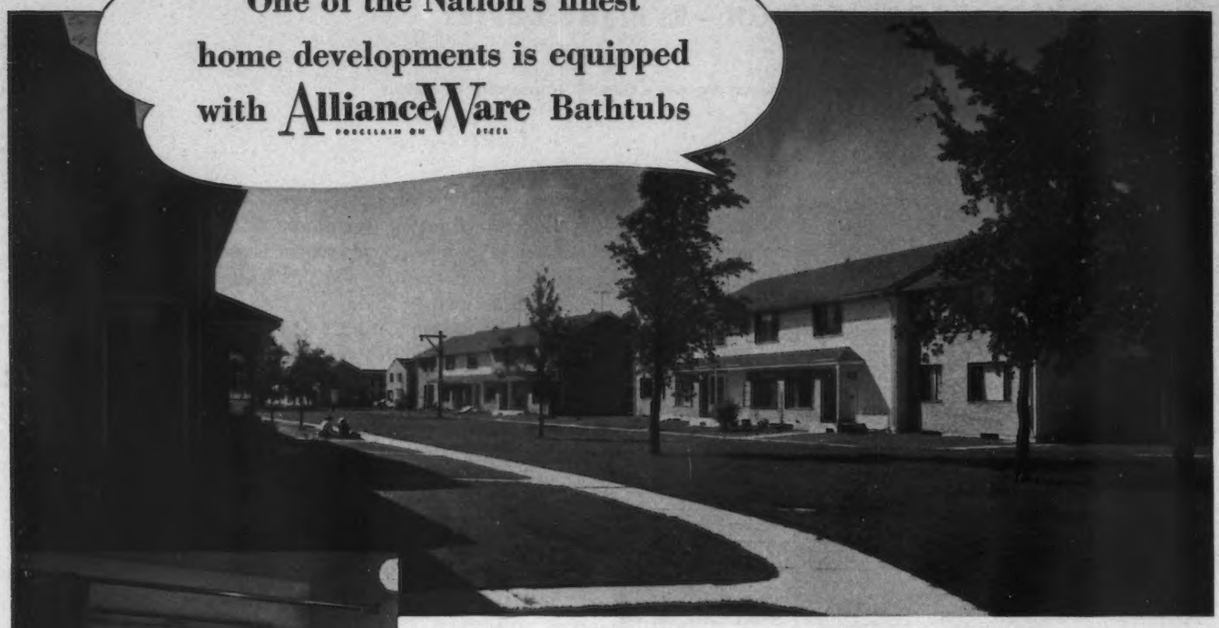


Figure 1.

Use of a 4-ft module, referenced to the nominal inside face of wall coincides with stud spacing and wallboard sizes, as shown in partial floor plan above. Wall sections are planned for pre-assembly and tip-up. Heights accommodate 8-ft interior panels. Detail "A" shows corner assembly used with this type of construction

One of the Nation's finest home developments is equipped with AllianceWare Bathtubs



A vista of the attractive homes in Park Forest, Illinois.



An AllianceWare bathtub photographed in a Park Forest home.

Park Forest Homes are also equipped with AllianceWare sinks.

"Plan for ideal family living in spacious beauty, comfort and safety"—this is the aim of the developers of Park Forest, Illinois.

When completed, this extensive home building project will embrace a total of 7500 dwelling units. The first 3,000 rental units consisting of five- and six-room duplex houses with one, two or three bedrooms have been completed. All of the completed homes are equipped with AllianceWare bathtubs—evidence that AllianceWare meets the exacting demands of progressive designers of homes and apartments.

There are sound reasons for the choice of AllianceWare by leading architects and builders. Modern styling, stainproof surface and a choice of colors in AllianceWare enhance the beauty of bathrooms, large or small.

Practical details of AllianceWare construction, such as exact dimensions, wall guard flange that stops water leaks around the tub at the wall line, and anchor lugs which prevent shifting or settling of tub are added values of great importance at no extra cost.

Your plumbing contractor will be glad to give you full details of AllianceWare; or write us for catalog sheets describing the complete AllianceWare line.

AllianceWare, Inc. Alliance, Ohio

Bathtubs • Lavatories • Sinks

Park Forest is being erected by
American Community Builders, Inc.
Loebl, Schlossman & Bennett, *Architects*
Consoer, Towsend & Associates, *Consulting engineers*
Warren Barr Supply Co., *Plumbing Wholesalers*
Charles Thumm, *Plumbing Contractor*

AllianceWare
PORCELAIN ON STEEL

MODULAR COORDINATION—10: Frame Houses

Prepared with the cooperation of the Small Homes Council, University of Illinois

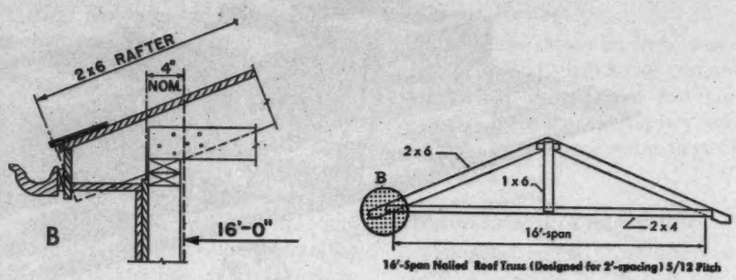


Figure 2.

Pre-assembled roof trusses simplify modular construction; spans and 2-ft spacing correspond with 4-ft module. Detail B, above left, shows joining of truss with nominal 4-in. stud wall

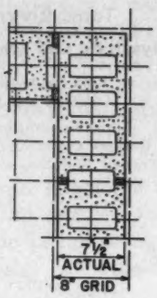


Figure 3.

Use of 8-in. grid for layout of concrete block foundation wall reduces cutting of units

sions by amounts equal to mortar joints, facilitating use with modular masonry where needed. The following table gives standard sizes and thicknesses of structural insulating board products:

Product	Sizes	Thicknesses
Building Board	4x6′, 4x7′, 4x10′ 4x8′, 4x12′, 4x9′	½″, 1″
Sheathing	4x8′, 4x10′ 4x9′, 4x12′	½″, 25/32″
	2x8′	25/32″
Lath	18″x48″	½″, 1″
Tileboard (Panels)	12″x12″, 12″x24″ 16″x16″, 16″x32″	½″, ¾″, 1″
Plank	Widths: 8″, 10″, 12″, 16″ Lengths: 8″, 10″, 12″	½″

Selection of Module

As with masonry construction, the basic module used for coordination of materials in frame construction is 4-in. However, due to the larger sizes and fewer number of materials used, a 4-ft unit is generally found more convenient for layouts, particularly for use with sheathing board and interior panels. Other multiples of 4 in. are often used to conform with stud or other unit spacing.

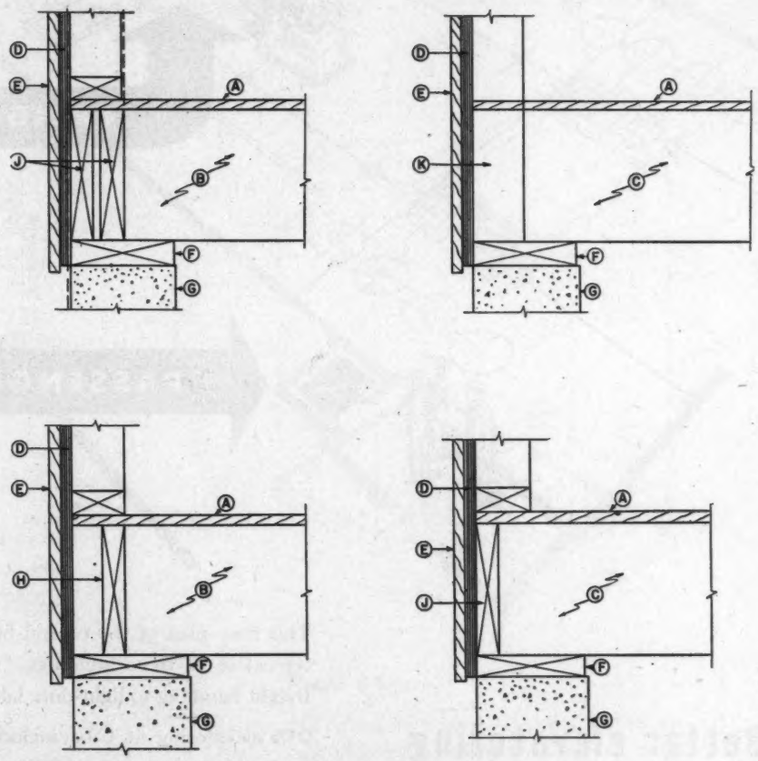


Figure 4.

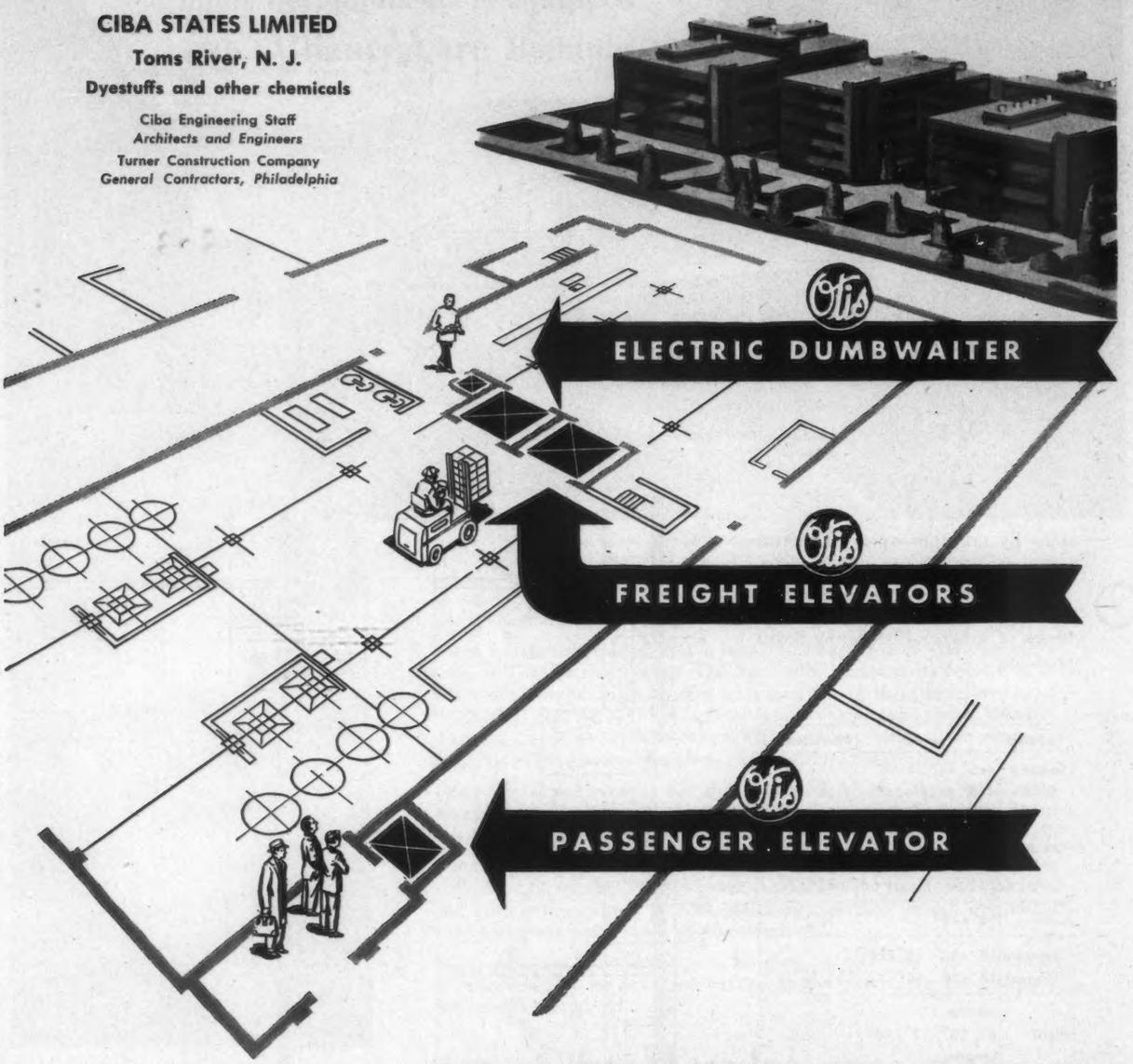
Standard sized joists may be cut as at C or blocked as at B to fit modular layouts.

- **A.** *Subfloor*
- **B.** *2 x 10 joists at 2 ft increments*
- **C.** *2 x 10 joists cut to length. Waste used as solid bridging*
- **D.** *Sheathing*
- **E.** *Siding*
- **F.** *2 x 8 sill*
- **G.** *8 in. concrete block*
- **H.** *Blocking*
- **J.** *Header*
- **K.** *2 x 4 studs*

"Factory-Traffic" Elevatoring

CIBA STATES LIMITED
Toms River, N. J.
Dyestuffs and other chemicals

Ciba Engineering Staff
Architects and Engineers
Turner Construction Company
General Contractors, Philadelphia



This floor plan of the central building at CIBA's new Toms River Plant is typical of all three buildings. "Factory-traffic" ranges from industrial-truck freight handling to light-duty laboratory service.

OTIS elevatoring at Ciba includes 4 GENERAL-DUTY FREIGHT ELEVATORS (one with explosion-proof features), 1 FREIGHT ELEVATOR for industrial truck loading, 1 ELECTRIC DUMBWAITER and 1 PASSENGER ELEVATOR.

WHY DID CIBA BUY OTIS? Excellent 20-year service record of OTIS elevators in other Ciba plants . . . the ability of OTIS to assist on all problems of vertical transportation . . . the fact that all the equipment is OTIS designed, manufactured, installed . . . that OTIS assumes responsibility for the entire installation.

For further details of OTIS equipment, see SWEET'S Architectural File. Or, call your local OTIS office. Otis Elevator Company, 260 11th Avenue, New York 1, N. Y.

Better elevatoring is the business of

Otis

MODULAR COORDINATION—11: Frame Houses

Prepared with the cooperation of the Small Homes Council, University of Illinois

Grid placement has generally been found most convenient when a grid line is referenced to the nominal inside face of a wall. This permits use of standard interior panels with practically no cutting, and permits flexibility in exterior wall details. Any grid position adopted should be used consistently throughout the job. Modular details for wall corners often determine the best grid position, so that studs maintain a uniform spacing for finish materials. A 4-in. grid is often used for the correlation of modular details. Generally when walls are centered on grid lines, studs and joists are centered on grid lines. This may be modified if necessary to provide nailing for finish material.

Typical House

The details shown on these pages are of a typical small house planned for modular coordination and preassembly methods. Interior bay sizes are 16 by 24 ft to conform with stock panel sizes.

Organization of Materials

Foundation walls of poured concrete, or ground slab floors are easily made to conform with modular sizes. If concrete blocks are used, savings can be made if dimensions are referenced so that no blocks need be cut.

Floor joists should be studied to average the greatest savings between cost of labor and materials. As shown in Figure 4, use of a 4-ft grid referenced to the inner face of the exterior wall necessitates cutting of the joists or use of a double header or blocking.

The wall framing details shown on Sheet 9 are based on assembling sections of the exterior wall and tipping them up into position to reduce construction costs. Heights of the wall sections in this case are planned to accommodate interior panels.

Pre-assembled roof trusses, generally spaced on 2-ft centers, give considerable savings in small house construction. Their use permits erection of the outer shell of the house, and installation of flooring, ceilings and wall panels with a minimum of cutting. Interior partitions are then assembled and tipped into place.

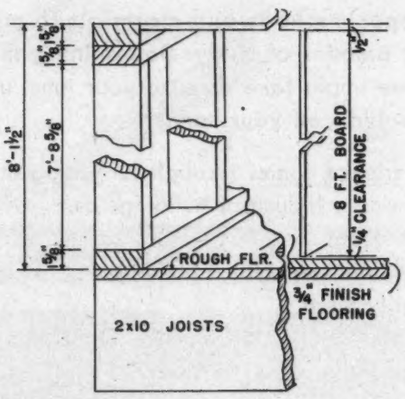


Figure 5.

Detail shows relationship between 4 by 8 ft sheet board material and interior wall framing. A ¼-in. clearance eases installation

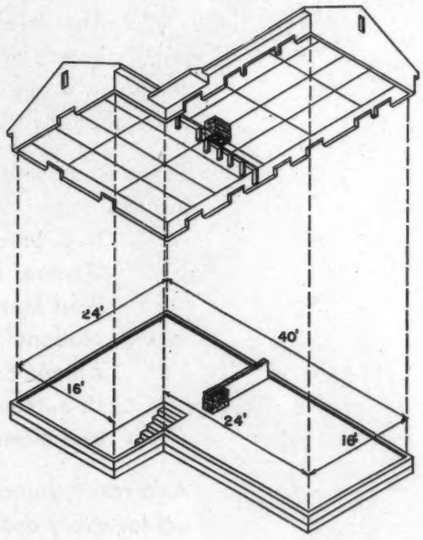


Figure 6 *(above).*

No cutting is required for ceiling panels except at chimney, girder and bearing partition. Savings are made if finished floors and ceilings are applied before erection of interior partitions. All measurements indicated are from the inside faces of the exterior walls

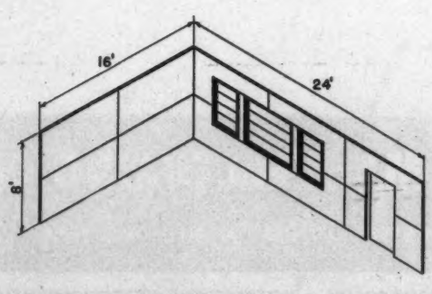


Figure 7 *(left).*

Cutting of wall panels is minimized by modular room sizes. Material cut from door and windows could be used for closets

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and many other private and governmental industrial projects.

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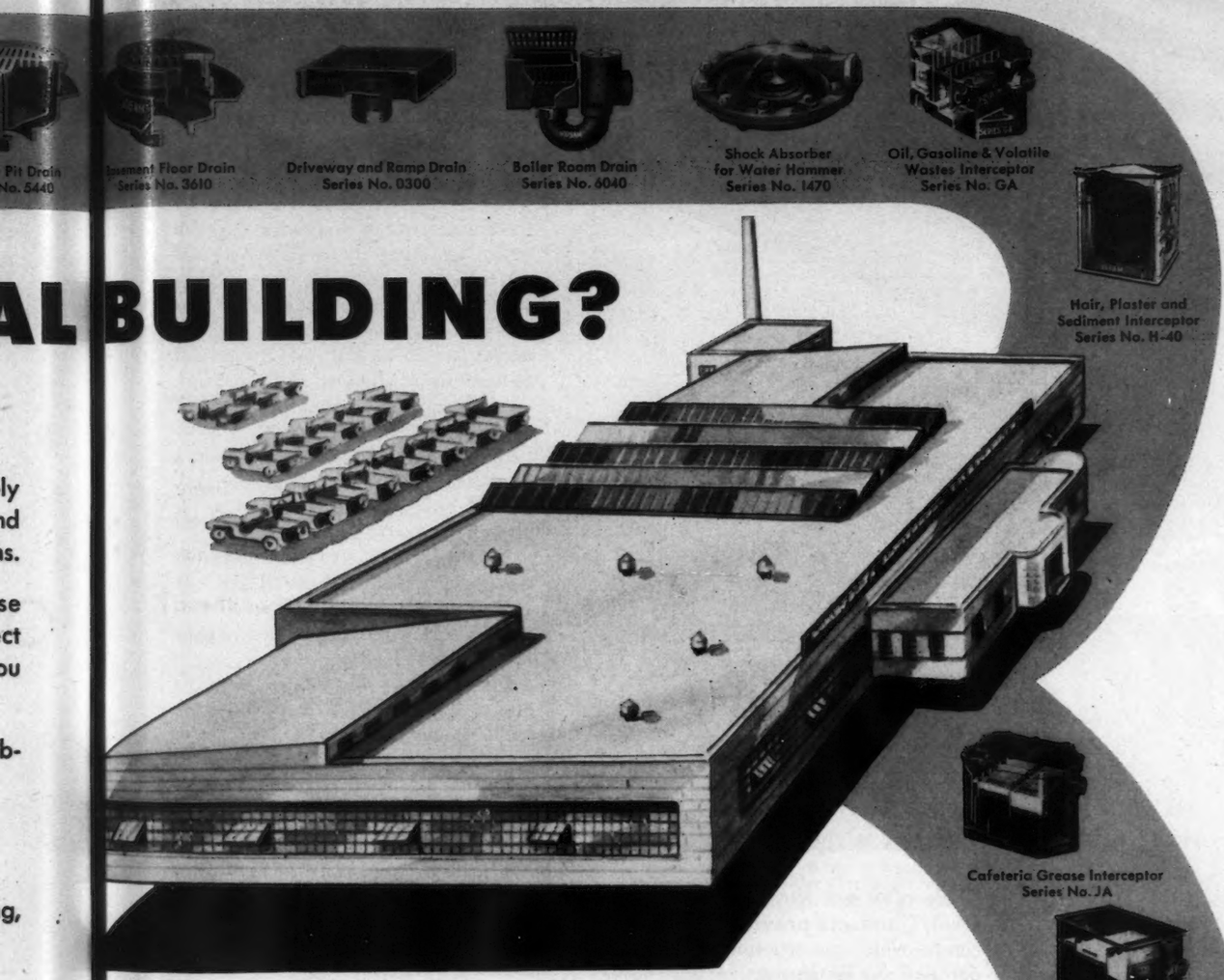
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PRODUCTS

(*Continued from page 163*)

shops — wherever protection is desired from mould, mildew and corrosion. A fan draws the damp air over refrigerated coils at a rate, according to the manufacturer, to enable maximum moisture condensation, and then expels dry, reheated air into the room. The coils are devised to form the moisture quickly into drops, preventing re-evaporation. A rustproof 8-qt receptacle holds the drops, or if desired the unit may be placed over a permanent drain. It is said to be impossible for the dehumidifier to overdry air at ordinary room temperature.

The unit is claimed to remove 14 pints of water every 24 hours from room air at 80 F and 79 per cent relative humidity, and up to 1 pint of water every hour (24 pints in 24 hours) under more severe conditions. It is installed by plugging into a 115 volt, single phase, 60 cycle outlet. Remington Corp., Auburn, N. Y.

Plastic Finish for Hardboard Panels

A plastic finish, *M-67*, for *Monowall* predecorated hardboard wall and ceiling panels is said to produce a lustrous and durable surface, and to withstand severe



Predecorated hardboard wall and ceiling panels feature new plastic finish

(*Continued on page 186*)

Denver's "SKY CHEF RESTAURANT" selects...

Carpet Craftsmanship . . . from the looms of Mohawk

for that "Walking on Air" feeling!



Entrance to dining room and lounge of Denver's Stapleton Sky Chef Restaurant — carpeted with handsome, durable Texturepoint by Mohawk. *Designer: Clinton A. Schofield — Architect.*



Attractive floral design in carpet sets decorative motif for Denver's Sky Chef lounge.



Luxurious and Spacious Sky Chef dining-room . . . seats 182 persons.



Long wearing Texturepoint . . . rugged round wire Mohawk Wilton carpet in attractive modern floral design sets the decorative motive for the luxurious Sky Chef Restaurant at Colorado's Stapleton Municipal Airport . . . and solves the carpet problem for years to come. For Texturepoint is a carpet especially designed by Mohawk contract carpet experts to absorb the concentrated traffic of busy commercial installations.

Your local Mohawk contract carpet dealer can be of great service to you in working out your carpet problems. His extensive knowledge of carpet will save you time and money . . . for he knows from experience which carpet will serve your individual needs best.

Carpet Craftsmanship . . . from the looms of

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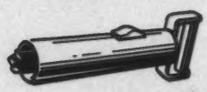
Write **Mohawk Carpet Mills, Inc., 295 Fifth Ave., New York, N. Y.**
for the name of the nearest Mohawk Contract Dealer

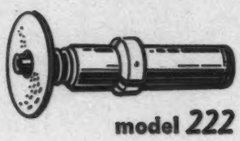


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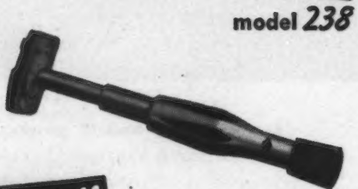
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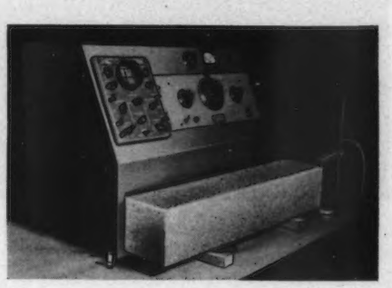
PRODUCTS

(*Continued from page 184*)

conditions (sun, stains, etc.). This newly-surfaced *Monowall* comes in a selection of 27 different colors and design combinations, has a surface reputedly nearly as smooth as glass. Armstrong Cork Co., Lancaster, Penn.

Electric Sonometer

An *Electric Sonometer* has been designed to determine the resonant frequency of a solid mass or material where strength is an important consideration. It measures Young's Modulus of Elasticity, and is said to be applicable to the testing of aluminum, carbon electrodes, castings, ceramics, concrete, pressed materials, steel beams, etc. The machine



Unit determines resonant frequency of a solid mass or material

consists of two units: control cabinet and portable pick-up. The first contains an amplifier which supplies 18 watts of power at the driving unit. This permits measurement of resonance frequency in solid masses weighing up to 1500 lb, say the manufacturers, with accuracy. Range of driving power is regulated by a single control. Resonant frequencies from 20 cycles to 22 kilocycles are measured with an oscillator. The phase relationship between the driving voltage at one end of the mass and various points within the mass, state the manufacturers, can be determined and viewed on the cathode ray oscilloscope screen. Thus flexural and torsional modes of

(*Continued on page 188*)



"HET UP" about YOUR wasteful heating SET UP?

Why not change to

THERMOLIER

UNIT HEATERS

If you're dismayed about *last winter's* high-cost-of-heating, how about next year — when it may be as hard to get *fuel*, as it was for you to get *heat* this year?

Here's a red-hot tip. To save heat and fuel, install Thermolier Unit Heaters. But don't delay. Material shortages can seriously disrupt the production of unit heaters. In addition, skilled men are available to make installations now. They may not be in the days ahead. Study these Thermolier Unit Heater advantages — *and act promptly.*

HEATING COMFORT Thermoliers provide quick heating from a cold start. Desired room temperatures are easily maintained within a close range.

LOW FIRST COST Thermoliers are so efficient and so compact that their heating capacity is often equivalent to the capacity of cast iron radiation or pipe coils of twice the cost.

ECONOMY OF OPERATION Heat is forced down to the working level . . . not banked uselessly at the ceiling level.

ADAPTABILITY TO EQUIPMENT AND FLOOR LAYOUT Thermolier unit heating is widely used in industrial plants and warehouses, garages, stores and public buildings. The units and the simple piping are overhead where they do not interfere with arrangement of the operating machinery or equipment.

THERMOLIER CONSTRUCTION FEATURES THAT SAVE MONEY

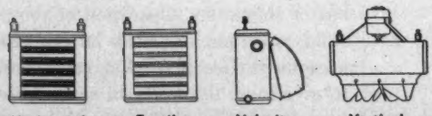
Use of plain thermostatic trap, the simplest and least expensive kind of trap, is practical because of Thermolier's exclusive internal cooling leg.

Maximum capacity provided at all times and annoying, destructive water hammer eliminated by built-in pitch of tubes and internal cooling leg which assures continuous drainage of condensate.

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Safety and durability assured with leak-proof tube-to-header construction.

Eight other important features. Write for Thermolier Catalog.



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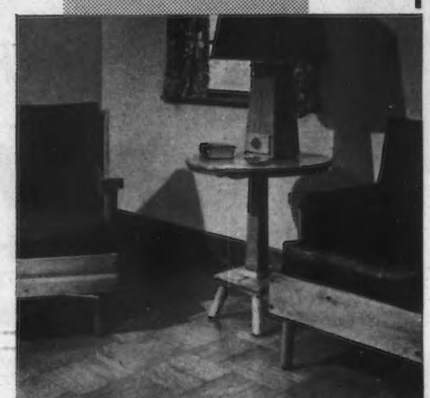
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The luxury of Parkay ready-finished hardwood floors is not reserved for buildings of any specific type or price class. True, there are no finer hardwood floors than Parkay. Made of choice American Oak, then carefully factory finished, this flooring offers a lifetime of wear while keeping its lustre and beauty.

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PARKAY
READY-FINISHED HARDWOOD FOR FLOORS AND WALLS

PRODUCTS

(*Continued from page 186*)

vibration may be determined. The unit is primarily a laboratory installation; semi-portable units are available. Electro Products Laboratories, 4501 Ravenswood Ave., Chicago 40, Ill.

Lettering Instrument

The new *Varigraph* lettering instrument is claimed to produce hand lettering in one tenth the usual time, and to make many sizes and shapes of letters from a single templet. The device is precision built and is based on a variable pantograph principle. Weight is 1¼ lb.



Instrument permits lettering of hundreds of various sizes

The device is said to function simply—a tracing point is guided through an engraved master letter and, two dials having been set to control width and height of desired lettering, a pen reproduces the finished letter. Hundreds of extended or condensed letter sizes are claimed to be achieved in this way. Because a single master templet is used, there is not the hindrance of running out of characters. Operation of the machine is simple and little lettering skill is required. Use of the Varigraph is said to give more flexibility in setting headings, lessen the time required to make "trick" lettering effects such as perspective, circular, overlapping and shadow, etc., techniques. The Varigraph Co., Madison 1, Wis.

(*Continued on page 190*)



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Flintkote HYDRALT Protective Coatings, for example, are a unique mineral colloid type of asphalt emulsion which creates a film reinforced within itself. They are durable. So durable, in fact, that many installations remain just as effective after *20 years.*

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. . . Won't crack or check from cold.
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Be sure and ask about our Asphalt Emulsions for your own use . . . and button up your industrial protective coating problems *for good.*

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FLINTKOTE
Products for Industry

PRODUCTS
(*Continued from page 188*)





Mobile lab has portable equipment for testing all components of home heating systems

Mobile Test Laboratory for Heating Systems

The National Warm Air Heating and Air Conditioning Association is placing a completely equipped mobile laboratory in service for testing newer types of warm air heating systems across the nation. A secondary objective is the testing of the use of materials not customarily used to construct or install systems.

The truck-contained laboratory is part of a 32-year-old research program sponsored by the Association at the University of Illinois. It will be placed at the disposal of merchant builders and realty developers to expedite faster dissemination of information about new heating designs and methods, particularly as they affect immediate needs of home construction. National Warm Air Heating and Air Conditioning Association, 145 Public Square, Cleveland 14, Ohio.



Free Wiring Plan Service

The construction Materials Department of General Electric has announced a free Residential Wiring Plan Service for architects and electrical engineers. Through this service, blueprints sent in by architects will be marked to show number and location of all switches for convenient control of all lighting fixtures and outlets for lights and appliances. If, according to the company, lighting fixture outlets are not indicated on the

(*Continued on page 192*)

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FROM STOCK SIZE UNITS



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CHECK THESE CONVENIENT Pella FEATURES

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DUAL GLAZING AND WEATHER STRIPPING — All Pella Casements are dual glazed to insulate against winter cold and summer heat . . . weather stripped to eliminate drafts.

MANY THERMOPANE SIZES AVAILABLE — More standard Thermopane sizes for Pella Casements are available than for any other wood casement windows. Standard size Thermopane is available for the following Pella Ventilating units: 2316, 2418, 25110, 3216, 3319-K, 3319, 34112. Thermopane or Twindow Insulating Glass is also available in standard sizes to fit most Pella picture windows.

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for details, specifications and sizes available for Pella Casement Windows. No obligation.



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Please send free new file of CASEMENT details and specifications in A.I.A. folder.

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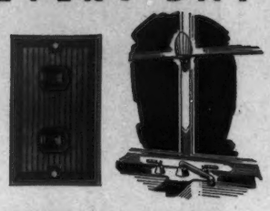
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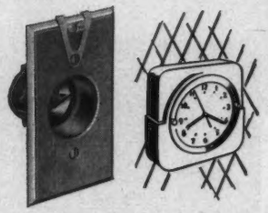
Electrical Conveniences

EVERY DAY



INTERCHANGEABLE DEVICES

The H&H interchangeable line may be employed many diverse ways to suit requirements. Assortment of plates, outlets, switches, pilot lights, etc., is found in H&H catalog.



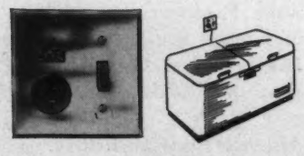
CLOCK OUTLET

Connecting clock electrically, this outlet is concealed by the clock. No wires exposed. Recess for plug cap provides flush job.



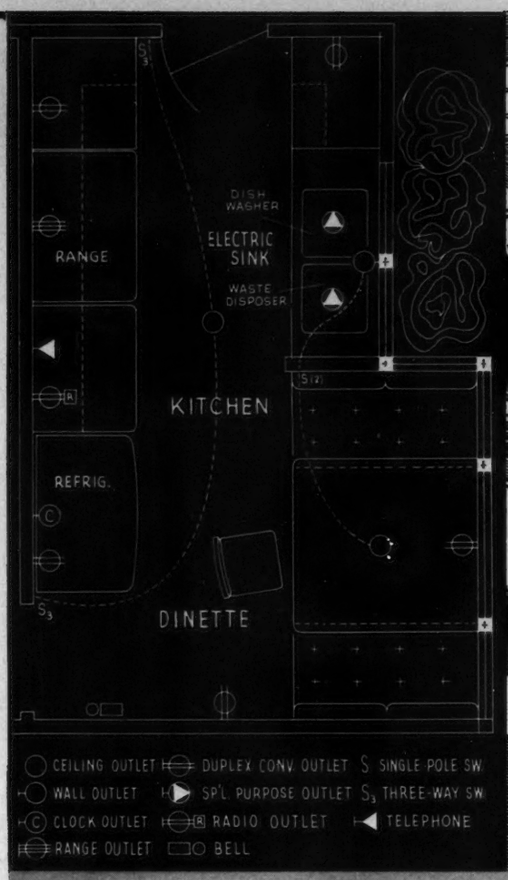
RANGE OUTLET

Flush, polarized outlet makes range connection easy. Neat appearing and inexpensive. Surface types available.



SWITCH, RECEPTACLE, LIGHT

Combination excellent for modern appliances in kitchens. Reminder light warns that switch is ON. Receptacle in same plate affords multiple uses and added convenience.





THERE'S EVERYDAY PLEASURE IN MODERN KITCHEN-DINETTES

HELP YOUR CLIENTS FIND IT WITH H&H WIRING DEVICES

It's easy for the average home-planning couple to forget such things as switches and receptacles when they're describing to you the home they visualize, so they'll need some reminding. Remember that adequate wiring, and quality wiring devices, can contribute much to making their lives complete — today and tomorrow. You'll find the complete line of H&H wiring devices contains *everything* in modern, dependable, service-proved units, standard and special. Plan to specify H&H on every job.

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PRODUCTS
(*Continued from page 190*)

blueprint, the wiring layout will be based on typical fixture locations. In addition, the service is said to supply several booklets on wiring and lighting plus a suggested guide for specifications covering installation of G-E remote control systems. Blueprints should be sent to: Wiring Device Division, General Electric Co., Bridgeport 2, Conn.

Fireproof Curtain Wall

A newly developed 6-in. perlite curtain wall has recently received a 4 hr fire rating from the Underwriters' Laboratories, Inc. The technique was worked out by McNulty Bros., lathing and plastering contractors, in collaboration with Bruce A. Gordon Co., Engineers.

The wall consists of an exterior layer of *Permalite*-portland cement plaster or concrete 4-in. thick, and an interior layer of *Permalite*-gypsum plaster 1-in. thick, separated by a furring channel. Vertical structural steel supports are embedded in the 4-in. cement plaster. These are provided with metal fins to attach weatherproof facades to exterior walls. Paper-backed metal lath is used in interior and exterior layers. Great Lakes Carbon Corp., Bldg. Products Div., 18 E. 48 St., New York 17, N. Y.





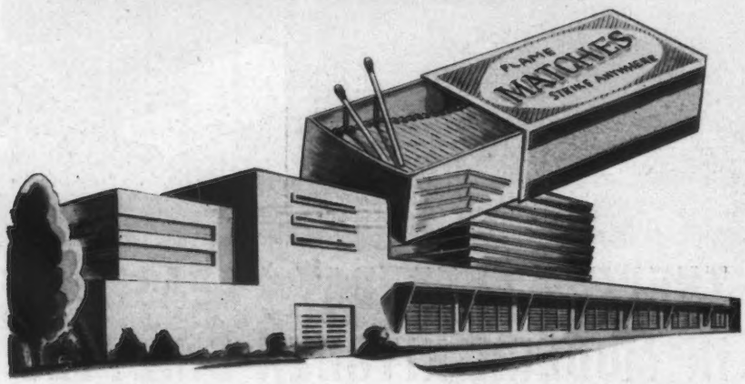
Above: supports for fireproof wall. Below: first exterior coat applied

Marble Face Building Blocks

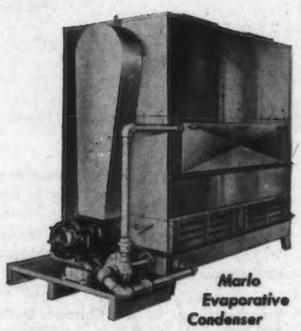
Marble Face Building Blocks, available with either cinder or concrete backing, are said to effect savings in construction by creating a completely finished wall in one masonry operation. Special as well as standard block sizes are available and come in white or any

(*Continued on page 196*)

DON'T PUT MATCHBOXES ON YOUR BUILDINGS!



specify all-metal Marlo Cooling Towers and Evaporative Condensers



Marlo Evaporative Condenser

Avoid the fire hazard of wood—by specifying all-metal Marlo Cooling Towers and Evaporative Condensers that offer complete safety—plus these important advantages:

DESIGNED FOR INDOOR or OUTDOOR INSTALLATION
Compact Marlo Units can be installed easily indoors, or on the roof below the skyline . . . never spoil the beauty of your buildings.

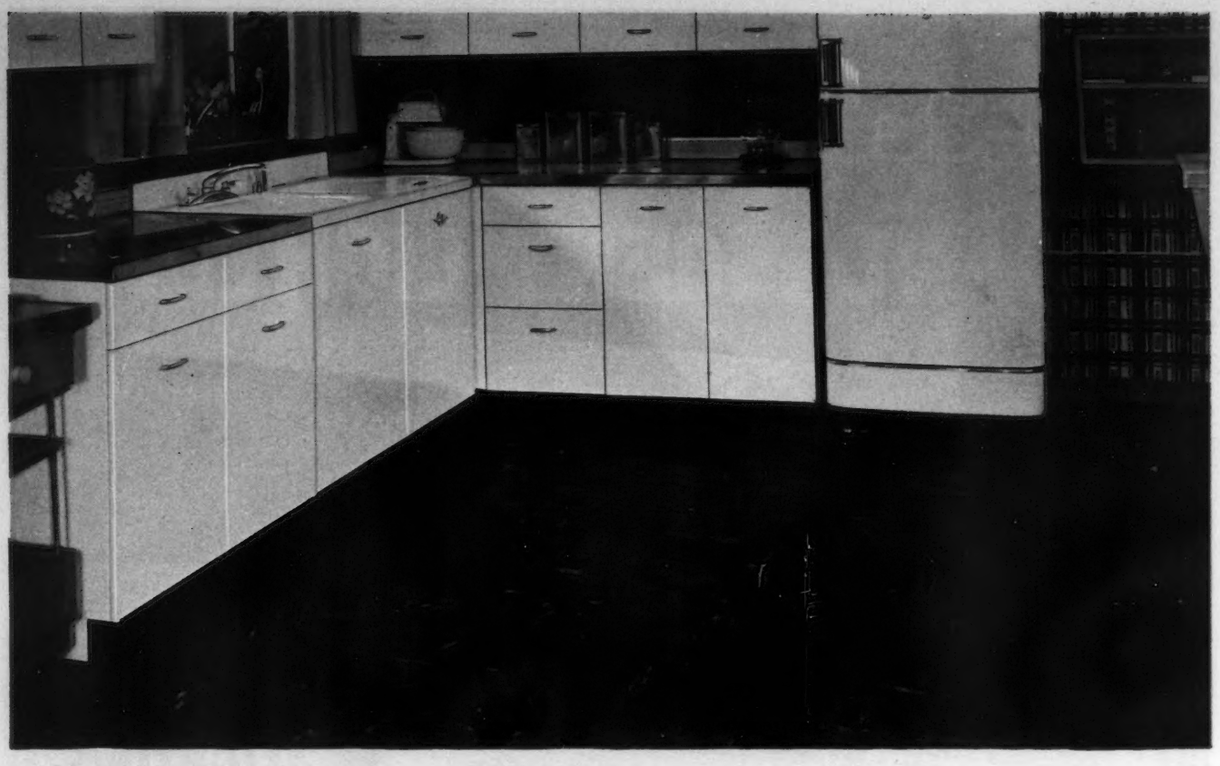
ECONOMICAL
Marlo Units assure maximum water savings . . . up to 95% of normal cooling water demand.

QUIETER
Interior surfaces are coated with special sound-deadening mastic; all motors and pumps are resilient-mounted.

MORE DURABLE
Marlo Cooling Towers and Evaporative Condensers are doubly-protected inside and outside against corrosion.

Write for full details for "roughing in" for your specific requirements.

Marlo
MANUFACTURERS OF
MARLO-HEAT TRANSFER
COIL CO. • 6135 Manchester Rd. • St. Louis 10, Mo.
COOLING TOWERS • EVAPORATIVE CONDENSERS • INDUSTRIAL COOLERS
AIR CONDITIONING UNITS • MULTI-ZONE UNITS • BLAST HEATING & COOLING COILS



2 Beautiful Floors... by Johns-Manville

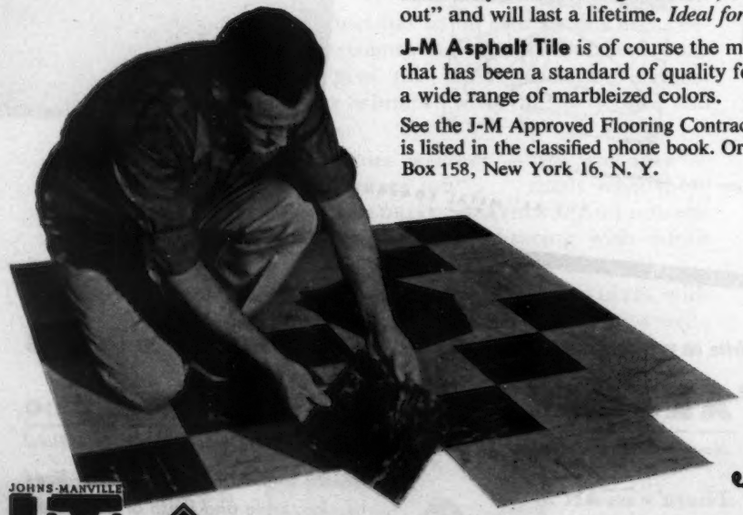
Save work...No scrubbing...Easily kept spick-and-span!



Johns-Manville Terraflex is an entirely new and different luxury floor tile. Made of vinyl plastic and asbestos and completely proof against greases, oils, and alkalies, it is practically *indestructible*. Possesses a clarity and warmth of color hitherto obtainable only in rich carpetings. Unharmed by commonly used cleaning solutions, Terraflex cannot be "washed out" and will last a lifetime. *Ideal for kitchens and cafeterias.*

J-M Asphalt Tile is of course the modestly priced flooring that has been a standard of quality for decades. Comes in a wide range of marbleized colors.

See the J-M Approved Flooring Contractor in your area. He is listed in the classified phone book. Or write Johns-Manville, Box 158, New York 16, N. Y.



TERRAFLEX

VINYL PLASTIC - ASBESTOS TILE

AND

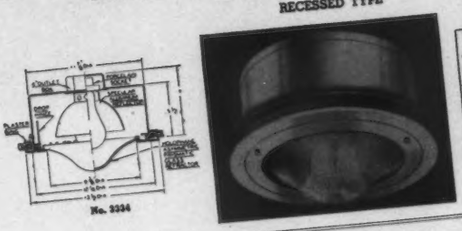
J-M ASPHALT TILE

JOHNS-MANVILLE JM PRODUCTS

Other J-M products include Acoustical Ceilings—Movable Walls—Corrugated Transite®—Built-Up Roofs—Etc.

ART METAL
INCANDESCENT LIGHTING

CORRIDOR
HOLOPHANE ASYMMETRIC PRISMATIC GLASS REFRACTOR
RECESSED TYPE



Cat. No.	Distribution Characteristic	Refractor Size	Max. Watts	DIMENSIONS Face Plate	Insert Box Size
3324	Asymmetric	9⅞" Dia.	150	13½" Dia.	11⅛" Dia. x 3"

One Lamp—Position Vertical. Drop Hinged Door. Reflector: Specular Aluminum.
FINISH: Drop Hinged Door Baked Satin Aluminum—Trim Baked White Enamel.
Furnished Complete with adjustable Plaster Ring and 4" Outlet Box Attached.

SPECIFICATIONS

Holophane Prismatic Glass Refractor provides an Asymmetric (corridor-type) light distribution.
Lamp position—vertical (1-150W).
Spherical Reflector is made of 20-gauge aluminum, finished specular, and cooperates with the refractor for maximum efficiency.
Refractor holder door is drop hinged.

Insert Box and Trim are one integral assembly, made of .027 gauge steel, and processed to resist rust.
Furnished complete with Adjustable Plaster Ring and a 4" Outlet Box.
Approved by Underwriters' Laboratories, Inc.
Finish is Baked White Enamel inside and outside—the Drop Hinged Door is Baked Satin Aluminum.

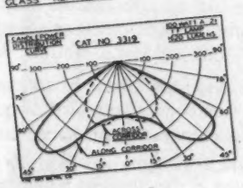
VENTILATED SURFACE TYPE—TWO-PIECE HINGED BAND

Holophane Prismatic Glass Refractor provides an Asymmetric (corridor-type) light distribution.





No. 3319 12" Dia. 8½" O.A. Glass 10"x3" 100W
FINISH: Brushed Aluminum.
Complete with Reflector Plate and Cross Bar.
Made of Aluminum.



Approved by Underwriters' Laboratories, Inc.

THE ART METAL COMPANY

Page 36

This page of CORRIDOR LIGHTING is one of many specific lighting types

Explicit Catalog Data

- 99 Product Illustrations
- 51 Cross Section Details
- 47 Light Distribution Curves
- 24 Coefficient of Utilization Tables
- . . Detailed Product Specifications
- . . Applications
- . . Data
- . . General Engineering Information

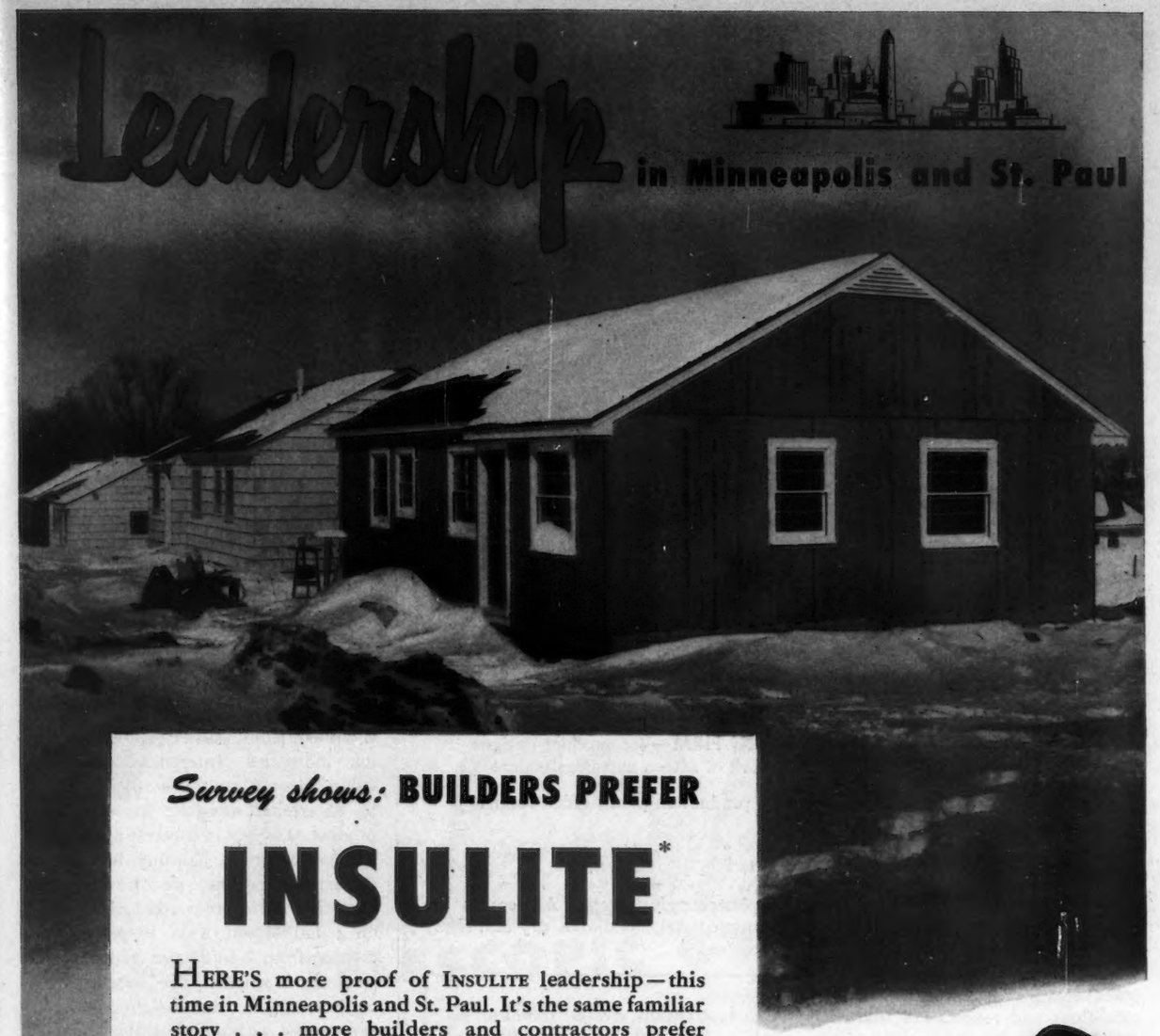
Write on your letterhead for free catalog, **INCANDESCENT UNIFIED LIGHTING**

THE ART METAL COMPANY • CLEVELAND 3, OHIO

Manufacturers of Unified Lighting Equipment for Office, Store, School, Hospital and Hotel

There's an Art Metal Incandescent Unit for every lighting need.

Art Metal Unified Lighting standardizes the design, style and finish of each unit, to achieve an architecturally integrated installation.



Survey shows: **BUILDERS PREFER**

INSULITE*

HERE'S more proof of INSULITE leadership—this time in Minneapolis and St. Paul. It's the same familiar story . . . more builders and contractors prefer INSULITE BILDRITE* SHEATHING than any other brand.

A building product has to be *good* in this area, because of severe extremes in climate. Builders *know* which products give the most protection against rugged Minnesota winters—with the least time and expense on the job.

"Best for Minnesota weather"—"It's stronger"—"Cuts my costs on every job" . . . that's what these builders say about BILDRITE SHEATHING. And remember . . . you don't need corner-bracing with 4-foot BILDRITE.

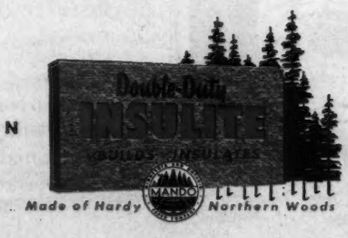
Architects everywhere are specifying INSULITE with confidence. For further information and samples write INSULITE at the address below.



"I'm saving $65.00 on every house I build . . .

because Bildrite reduces waste to a minimum and corner-bracing isn't necessary," says Roy Olson, Minneapolis builder. That's just one reason why Twin City builders prefer INSULITE.

Refer to Sweet's File, Architectural Section—10a/In



INSULITE DIVISION

MINNESOTA AND ONTARIO PAPER COMPANY
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*Reg. T. M. U. S. Pat. Off.

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A Division of General Aniline & Film Corporation. *"From Research to Reality."*
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PRODUCTS

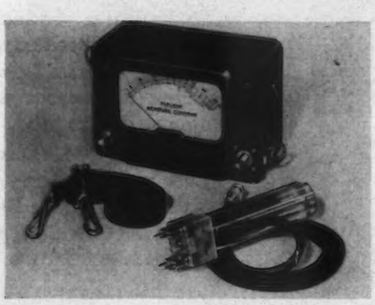
(*Continued from page 192*)

color. The ⅜ in. crushed marble face that is bonded to one or two sides of the block is claimed very durable, water- and peel-proof.

Styles include single and double faced blocks as well as a corner block. Blocks may be worked in patterns for both exterior and interior walls. Marble Face Blocks, Inc., 565 Fifth Ave., New York 17, N. Y.

Moisture Detector For Building Materials

The new *Delmhorst Model G Moisture Detector*, is designed for application in the wood, paint, plaster and other building industries. Interchangeable electrodes permit multi-use application—to determine moisture in any wood product as well as in concrete and plaster surfaces prior to painting to prevent subsequent peeling, discoloration and blistering. Moisture content can be read on a dial 4½ in. wide, in percentages ranging from 7 to 35 per cent. The instrument is small in size, measures 4½ by 7 by 3¼ in., and weighs 3¼ lb. It is equipped with an adjustable shoulder



Meter measures moisture content of wood, plaster and concrete

and neck strap. Featured is a push-pull switch which is said to allow the operator free use of both hands, an advantage in handling materials. *Model G* is said to be simply operated. Once the instrument

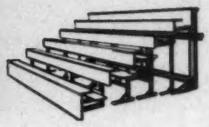
(*Continued on page 198*)





ABOVE: When seats are closed almost every foot of floor area is "recovered" for regular use.

LEFT: Medart "Two-Level" installation utilizes both balcony and gym floor for maximum audiences.



7 major reasons WHY you SHOULD SPECIFY MEDART TELESCOPIC GYM SEATS

THEY SAVE FLOOR SPACE! Unlike fixed seating, when Medart seats are closed, virtually every foot of floor area is made available for regular class work.

THEY'RE SAFE! Like a steel skyscraper skeleton, the understructure of Medart seats stands alone and supports the entire occupied load on *four* vertical steel uprights for *every row* that put the weight *on the floor*, not the wall.

THEY'RE STRONG! Authoritative tests under loads of 400 pounds per linear foot indicate no apparent deflection. Stability tests show no side-sway at peak of stress.

THEY SAVE MONEY! Medart seats cost less than knockdown or built-in seating. In addition, they provide quickly available, ample accommodations for large and overflow crowds that mean important extra revenue.

THEY'RE CONVENIENT! Exclusive "Floating Motion" design makes the largest seat section easy to handle. Another Medart advantage allows only 1 or more rows to be opened as usage requires, while other rows remain closed.

THEY PROTECT FLOORS! Seat sections roll open or closed on rubber cushioned rollers that retract and let the "live" load rest on large steel shoes when seats are occupied. Medart seats avoid caster depressions in highly finished floors.

THEY'RE GOOD LOOKING! Wood parts are light natural-color, finished in clear lacquer that complements every trim, neat modern gym. Baked-on enamel protects steel parts.

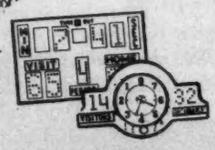
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FRED MEDART PRODUCTS, INC.
3540 DE KALB ST. ST. LOUIS 18, MO.
For 78 Years The Standard Of Quality

OTHER *Quality*
MEDART EQUIPMENT
—The most complete single source for gym equipment!



BASKETBALL BACKSTOPS
Every style—standard or special



SCOREBOARDS, Basketball and Football

GYMNASIUM EQUIPMENT
A complete line meeting all Official Standards

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Complete range of types and sizes

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A "must" in all phys-ed programs

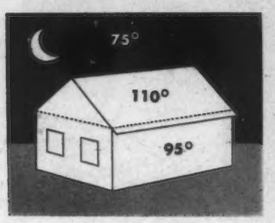
Ask for Literature

SEE OUR CATALOG IN SWEET'S

Low-Cost Home Cooling

WITH HUNTER ATTIC FANS

HERE'S HOW ATTIC VENTILATION COOLS A HOME

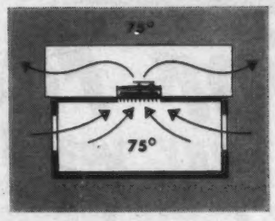


It's cooler outside at night.

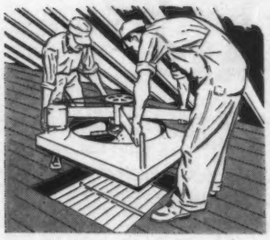
All day long a home absorbs heat from the summer sun. At night when outside temperatures have fallen to 75°, for example, the dead hot air in your attic may remain as high as 110°. This keeps the rooms below at an unbearable temperature of up to 95° or more.

Attic fan pulls the cool air inside.

A Hunter Attic Fan pulls the cool fresh outside air into the house, driving out the oven-like heat. In a few minutes after the fan is started, room temperatures drop 10° to 20° lower. An automatic time switch can be used to shut off the fan while occupants sleep.



NEW HUNTER PACKAGE FAN IS INEXPENSIVE AND EASY TO INSTALL IN OLD OR NEW HOMES



A Hunter Package Fan is the most practical and least expensive method of keeping a home comfortable on hot summer nights. This compact unit is easily installed in any new or old home. Furnished complete with fan, motor, suction box and ceiling shutter—with a choice of four sizes, to fit any home.



Cool comfort for a few cents a night.

This efficient attic fan is quiet and powerful, requires little or no maintenance. It costs only a few cents a night to operate and will last for many, many years. Backed by Hunter, exclusive fan makers since 1886. Mail coupon below for complete information on comfort cooling with Hunter Fans.

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Send complete information on Hunter Package Attic Fans to:

Name_____

Street_____

City and State_____

PRODUCTS

(*Continued from page 196*)

has been turned on, only a battery check is required, and electrodes are inserted into the material to be tested for a reading. The instrument turns itself off automatically when either placed face down or stored in its carrying case. The power supply is one standard B battery and one flashlight cell. Delmhorst Instrument Co., Boonton, N. J.

Meridianesques

A large model of the *Kalex World Clock*, capable of instantly giving the time in 83 countries, is designed for installation in office buildings, lobbies, etc. The clock is electrically powered, completely sealed and said to be guaranteed for life. The face of the clock measures 20 in. wide and 30 in. high.



New clock tells time of day and night in 83 countries

The clock tells Eastern, Central, Mountain, Pacific and international time. The International Date Line is included, and a half-light, half-dark disc indicates day and night. The Kalex Corp., 305 East 46th St., New York 17, N. Y.

Reflective Insulation

Richflex insulation is said to have very high reflectivity. Type A consists of two

(*Continued on page 200*)



NEW! Vogue Lavatory by RICHMOND

FLEXIBLE... for any type of installation ... ideal for vanity or dressing table use ... a handsome addition to any bathroom or powder room ... size 20" x 18", fits all cabinets.

FUNCTIONAL... can be used with all dressing table materials (plastic, linoleum, wood, tile) ... a perfect complement to luxurious interiors ... your choice of five rich, harmonious colors—Azure Blue, Bermuda Coral, Fern Green, Oriental Ivory, Mellow Red—plus Richmond's "whiter-white."

FASHIONABLE... fulfills today's demand for modern built-in units ... concealed front overflow ... wide slab space for extra room to arrange toilet articles ... recessed soap dishes ... splash rim.

FINEST... Richmond's quality vitreous china construction.

Be sure to see the RICHMOND exhibit—Booths 222-228 at N.A.M.P. show, Chicago, May 26-31

Whether for modernization or new construction, *Richmond's new Vogue Lavatory is ideal for any installation. When ordering, ask for G-141 punched for combination supply and drain fitting; G-143 punched for center set supply and drain fitting.*

RICHMOND PLUMBING & HEATING

RICHMOND

RICHMOND RADIATOR CO.—AFFILIATE OF REYNOLDS METALS CO.

See your wholesaler or mail Coupon today.

Richmond Radiator Company AR-5
19 East 47th Street
New York 17, New York

Please send me additional information and literature on the Richmond line of fine plumbing fixtures. No obligation, of course.

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COMPANY.....
ADDRESS.....
CITY.....ZONE....STATE.....



Blo-Fan* really moves air!

This is somewhat extreme, but it's a fact that BLO-FAN moves more air—quickly, quietly and efficiently!

It's easy to understand why when you study the design of the Blo-Fan blade . . .



Remember, if it hasn't got this blade, it isn't a Blo-Fan.

. . . This blade combines only the positive principles of both fan and blower. The fan element literally scoops up the air and feeds it to the blower element which expels it with great force. Actually, Blo-Fan lowers "shock loss" of the average blower to an irreducible minimum . . . That's why Blo-Fan *moves more air* at moderate speeds than either a fan or blower type ventilator . . .



And, on the subject of speed, Blo-Fan Model 210 is equipped with a 9-speed switch . . .

. . . At low to medium speeds, Blo-Fan handles the normal volume of steam and fumes easily, but for emergencies (like burning the toast or grease in the broiler), turn Blo-Fan to high speed and you can clear the room immediately.

This exclusive Blo-Fan feature allows the housewife to control the rate of ventilation in her home as easily as she controls the speed of her car!!!

Spot Ventilation at the Point of Air Pollution. For Kitchen, Bath, Game Room, and Laundry.

Blo-Fan

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THE MOST IMITATED HOME VENTILATOR IN AMERICA

25th Anniversary Year

Stocked by more than 600 wholesalers in 350 cities.

PRYNE & CO., INC. BOX R-551, POMONA, CALIFORNIA

Factories: Pomona, California; Newark, New Jersey Warehouses: Los Angeles, San Francisco, Chicago, Atlanta

PRODUCTS

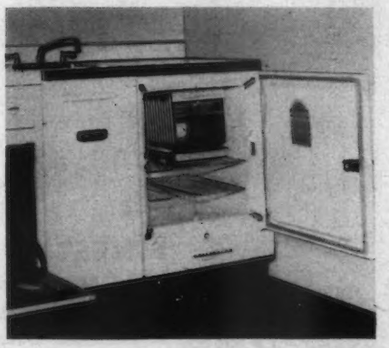
(*Continued from page 198*)

sheets of Richflex-coated kraft, bonded with asphalt and reinforced at the edges and center to provide nailing strips. Type B consists of one sheet of Richflex-coated kraft, bonded with asphalt to one sheet of plain kraft. Type C is a single sheet of kraft coated on both sides with Richflex.

According to the manufacturer, the insulation not only retains inner heat in winter and reduces summer temperatures but provides a cold air and moisture-vapor barrier. It can be used in walls, ceilings or under floors in both new and old homes. No special tools are needed for application. Richkraft Co., 228 N. La Salle St., Chicago, Ill.

Electric Refrigerator For Small Kitchens

The latest addition to the *Kelvinator* line of electric refrigerators is the compact *Model AB*, an under-the-counter unit designed for small kitchens. Having

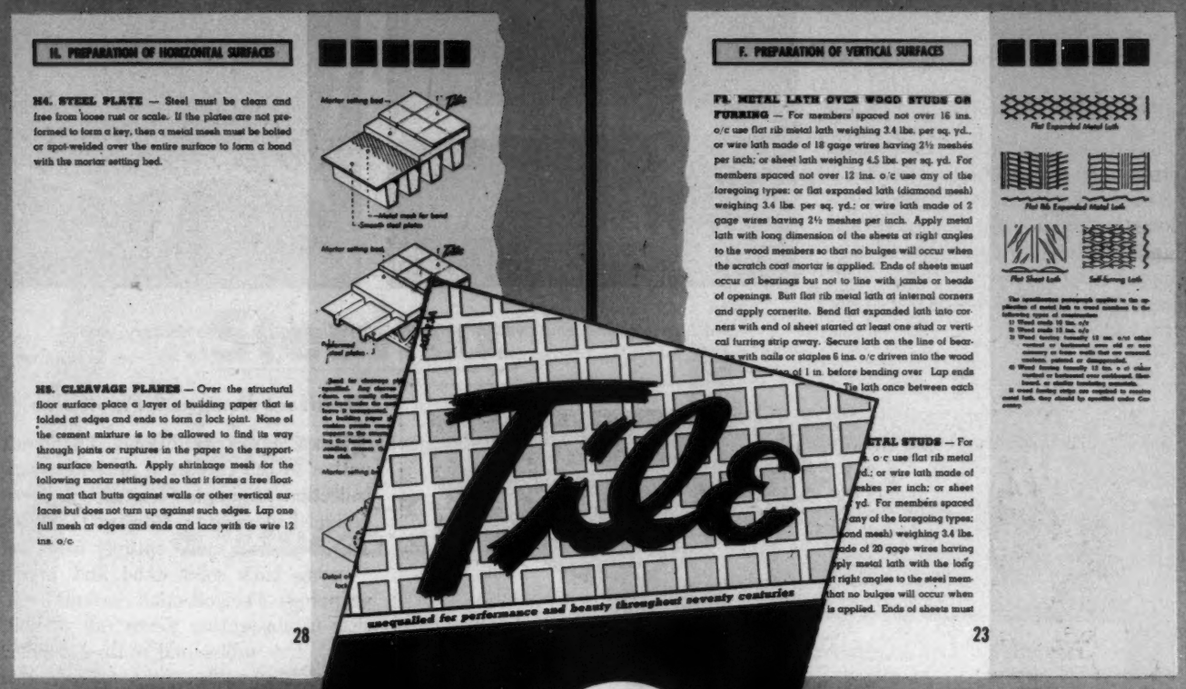


Under-the-counter refrigerator is designed for small kitchens

a capacity of 4.3 cu ft and equipped with a 23-lb-capacity freezer, the "Space Saver" refrigerator is 34½ in. high, 24 in. wide and 28 in. deep.

(*Continued on page 202*)

SAMPLE PAGES OF NEW 48 PAGE TILE HANDBOOK



H. PREPARATION OF HORIZONTAL SURFACES

H4. STEEL PLATE — Steel must be clean and free from loose rust or scale. If the plates are not preformed to form a key, then a metal mesh must be bolted or spot-welded over the entire surface to form a bond with the mortar setting bed.

H5. CLEAVAGE PLANES — Over the structural floor surface place a layer of building paper that is folded at edges and ends to form a lock joint. None of the cement mixture is to be allowed to find its way through joints or ruptures in the paper to the supporting surface beneath. Apply shrinkage mesh for the following mortar setting bed so that it forms a free floating mat that butts against walls or other vertical surfaces but does not turn up against such edges. Lap one full mesh at edges and ends and lace with tie wire 12 ins. o/c

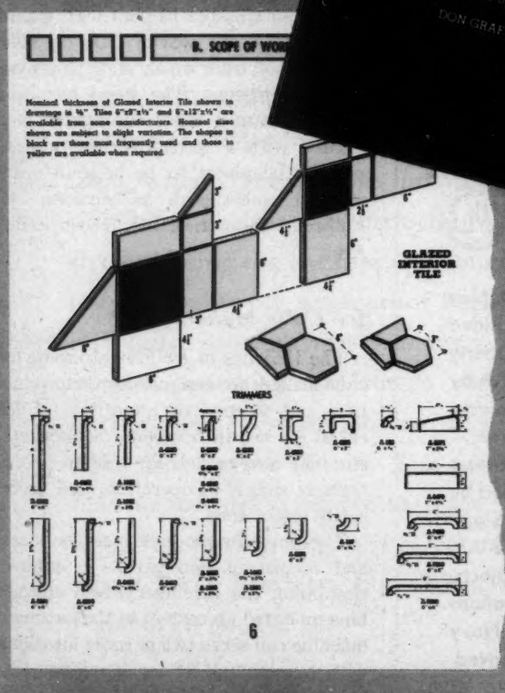
28

F. PREPARATION OF VERTICAL SURFACES

F2. METAL LATH OVER WOOD STUDS OR FURRING — For members spaced not over 16 ins. o/c use flat rib metal lath weighing 3.4 lbs. per sq. yd., or wire lath made of 18 gage wires having 2½ meshes per inch; or sheet lath weighing 4.5 lbs. per sq. yd. For members spaced not over 12 ins. o/c use any of the foregoing types; or flat expanded lath (diamond mesh) weighing 3.4 lbs. per sq. yd.; or wire lath made of 2 gage wires having 2½ meshes per inch. Apply metal lath with long dimension of the sheets at right angles to the wood members so that no bulges will occur when the scratch coat mortar is applied. Ends of sheets must occur at bearings but not to line with jambs or heads of openings. Butt flat rib metal lath at internal corners and apply cornerite. Bend flat expanded lath into corners with end of sheet started at least one stud or vertical furring strip away. Secure lath on the line of bearings with nails or staples 6 ins. o/c driven into the wood [illegible] of 1 in. before bending over. Lap ends [illegible] Tie lath once between each

…TAL STUDS — For [illegible] o/c use flat rib metal [illegible]d.; or wire lath made of [illegible] yd. For members spaced [illegible] any of the foregoing types; [illegible]ond mesh) weighing 3.4 lbs. [illegible]ade of 20 gage wires having [illegible]ply metal lath with the long [illegible]t right angles to the steel mem- [illegible]that no bulges will occur when [illegible] is applied. Ends of sheets must

23



B. SCOPE OF WOR[illegible]

Nominal thickness of Glazed Interior Tile shown in drawings as ½" Tiles 6"x2"x½" and 6"x12"x½" are available from some manufacturers. Nominal sizes shown are subject to slight variation. The shapes in black are those most frequently used and those in yellow are available when required.

GLAZED INTERIOR TILE

TRIMMERS

6

A HANDY GUIDE TO ALL TILE WORK

A USEFUL AID TO SPECIFICATION WRITING

The new 48 page Tile Handbook represents the experience and best judgment of the country's leading manufacturers and installers of Clay Tile.

COMPILED BY DON GRAF

His cross-sectional drawings and diagrams make the task of tile specification an easier one.

The Handbook covers three main areas: (1) The specification itself which takes in contractual and legal considerations, materials, general provisions, etc. (2) related work, including demolition, subflooring and paper, membrane waterproofing, etc. and (3) the Appendix, including glossary of terms, Bureau of Standards SPR 61-44 and construction details.

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General Tile Corporation
Gladding, McBean & Co.
Mosaic Tile Company
Murray Tile Company, Inc.
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Pacific Clay Products
Pacific Tile and Porcelain Co.
Pomona Tile Manufacturing Co.
Robertson Manufacturing Co.
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Tile Council of America,
Dept. AR2, 10 East 40th Street, New York 16, N. Y.

Enclosed please find $2.00 for an additional copy of the new Tile Handbook.

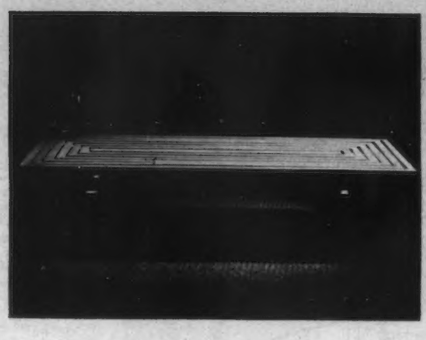
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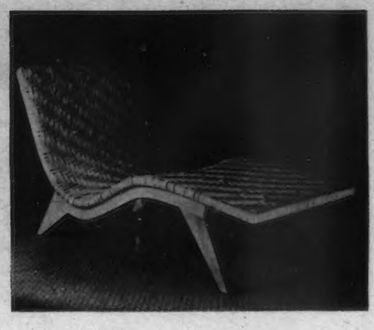
Firm Name_____

Firm Address_____

PRODUCTS
(*Continued from page 200*)

The exterior has a baked finish that is claimed to be acid- and grease-resistant. The base is recessed for toe room. The automatic interior light is protected against breakage by a steel wire guard. Shipping weight is approx 253 lb. Kelvinator Division, Nash-Kelvinator Corp., Detroit 32, Mich.

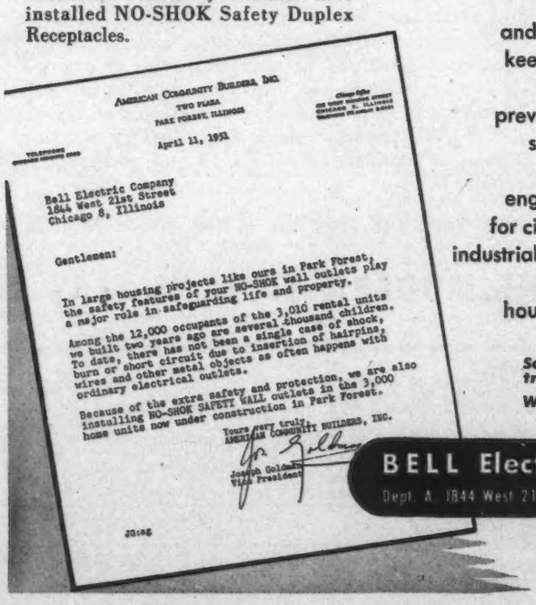




New furniture line employs native Ozark handicrafts in contemporary manner



When the additional 3,000 home units now under construction are completed, this suburban community will have a population of 25,000, approximately half of which will be children. To safeguard these thousands of youngsters, American Community Builders have installed NO-SHOK Safety Duplex Receptacles.



AMERICAN COMMUNITY BUILDERS, INC.
TWO PLAZA
PARK FOREST, ILLINOIS

April 11, 1951

Bell Electric Company
1844 West 21st Street
Chicago 8, Illinois

Gentlemen:

In large housing projects like ours in Park Forest, the safety features of your NO-SHOK wall outlets play a major role in safeguarding life and property.

Among the 12,000 occupants of the 3,010 rental units we built two years ago are several thousand children. To date, there has not been a single case of shock, burn or short circuit due to insertion of hairpins, wires and other metal objects as often happens with ordinary electrical outlets.

Because of the extra safety and protection, we are also installing NO-SHOK SAFETY WALL outlets in the 3,000 home units now under construction in Park Forest.

Yours very truly,
AMERICAN COMMUNITY BUILDERS, INC.
Joseph Colem
Vice President

No-Shok Safety Duplex Receptacles afford added protection to property and lessen fire hazards by keeping out metal objects, dust, water, etc.—prevent shocks and burns—save lives. Specified by leading architects and engineers all over the U.S. for civilian housing projects, industrial and farm installations and Army and Navy housing. R.E.A. approved.

Sold through leading electrical wholesalers.

Write for particulars today!

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Architect Designed Furniture

Based on a traditional handicraft native to the Ozarks, a refreshing new collection of simple furniture has been designed recently by Edward D. Stone. The pieces are made entirely from oak — using both solid wood and woven strippings. The collection currently consists of six seating pieces (all without arms), five tables and a three-paneled screen. The tables have tops formed from concentric rectangles affixed to supporting frames beneath. Table bases vary from crossbar to bent legs. Chairs and settees are woven oak on solid bases; stool, solid wood, and the screen, woven strippings. The wood has been kept in natural tones throughout and treated with a special varnish said to permit the pieces to be kept in semi-exposed places such as terraces, etc. Fulbright Industries, Inc., Fayetteville, Ark.

Ice Cube Makers

The 1951 line of *Ice-Flo* automatic ice cube makers are designed for the production and storage of quantities of ice cubes for use in hospitals, restaurants, etc. The new models are said to be extremely simple in operation, and to be easily maintained.

The units are made of stainless steel, and consist of two parts — a cabinet containing the machinery, and storage bins mounted on casters so that a single machine can serve two or more locations with a minimum of ice handling. For hospitals, there is a special storage bin for pharmaceuticals, antibiotics, etc.

The cubes are frozen in a tray under water which is constantly recirculated. At the end of the freezing cycle, the unit defrosts and releases the cubes which float to the top. The cubes then are carried by the circulating water over a dam, where they slide into the dry storage bin.

(*Continued on page 204*)

See how tough welded-wire **Pittsburgh Steeltex** bites deep into a stucco slab



Look closely at the actual-construction photograph. Notice that the Steeltex mesh is heavy, and the galvanized wires are welded together for greater rigidity. This provides positive protection against later distortion by actually strengthening the entire wall. Notice also the tough, double-ply waterproof backing. This not only protects the structure, it assists proper curing of the stucco slab. Steeltex backing and mesh are applied in one operation, thus saving money. For further good reasons for specifying Steeltex, see Sweet's or write for catalog D.S. 131, Dept. AR, Pittsburgh Steel Products Co., Grant Building, Pittsburgh 30, Pa.

Pittsburgh Steel Products Company

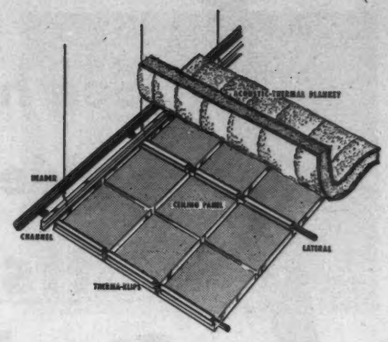
A Subsidiary of Pittsburgh Steel Company

PRODUCTS
(*Continued from page 202*)

The cycle then repeats itself. The bins are equipped with a thermal cutout which turns the machine off when the bin is filled, and automatically restarts it when ice is withdrawn. Four sizes are available, producing from 150 to 700 lbs of ice a day. Ice-Flo Sales Corp., 1901 Train Ave., Cleveland, Ohio.

Multi-Purpose Suspended Ceiling

The *Burgess-Manning Ceiling*, according to the manufacturer, is the first suspended ceiling which provides radiant heating and acoustical control, and permits cooling and draftless ventilation if desired. The framework consists of channels of 1½-in. steel, suspended on 4-ft centers. Two parallel 1½-in. hot water flow pipes, called headers, are suspended from the channels and connected at intervals throughout their length by parallel ½-in. pipes, called laterals.



Suspended ceiling combines radiant heating with acoustical control and ventilation

Headers and laterals are prefabricated and are said to be easily assembled. The ceiling itself consists of standard perforated aluminum acoustic pans connected to the laterals by clips which conduct heat from the laterals to the pans. The pans, in turn, radiate the heat from the ceiling into the room. Ceiling panels are snapped into place and removed for inspection of heating coils or other building services. An acoustic-thermal blanket, installed wall-to-wall over the heating coil, acts as sound absorber, thermal insulator and vapor barrier. Temperatures are controlled by means of a regular thermostat.

The company says that this type of ceiling also provides a type of summer air conditioning, with cold water circulating through the system and absorbing the heat radiated by warmer room objects. It also says that washing and ordinary oil paint do not affect the heat or acoustical properties. The ceiling is claimed to be highly fire-resistant.

While the ceiling is now in the "pilot" stage of production, several experimental installations have been made. General availability will be limited for the time being by material shortages. Burgess-Manning Co., Libertyville, Ill.

Refrigeration Cell

Acting on the principle of a storage cell, the *Dole Ice-Cel* is said to permit the storage of refrigeration effect and provide a means of utilizing the stored-up cooling power to supplement air conditioning systems in many types of buildings having heavy loads of a short duration. The cell can be charged at any time for convenience, at night, for example, and discharged in from 2 to 8 hours. A fairly small condensing unit can operate all day and most of the night to
(*Continued on page 206*)



Architect: George Paul Abington, Mass.

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for exterior house paint, you're assuring a finish that is both beautiful and long-lasting. For Cabot's Collopaking process reduces pigments to submicroscopic fineness and uniformly disperses them throughout the vehicle. Collopakes form a porcelain smooth surface that resists the effects of weather for years.

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Samuel Cabot, Inc. 529 Oliver Bldg. Boston 9, Mass.

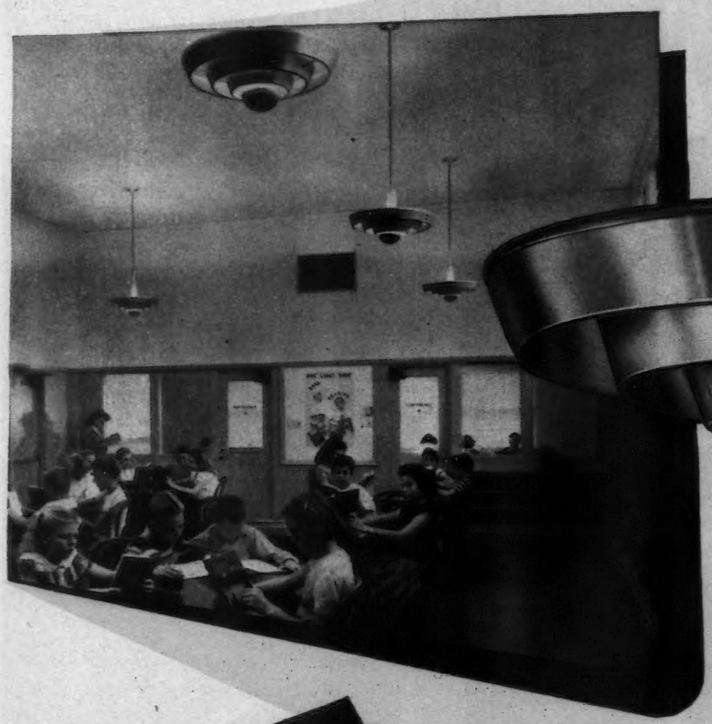
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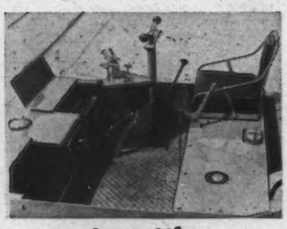
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PRODUCTS

(*Continued from page 204*)

charge the cell. During *Ice-Cel's* off time, an existing machine not ordinarily operated at night, may be used to charge the cell. Savings probably will be effected by use of such a device in that the demand put upon an air conditioning system will be alleviated by such a cell furnishing extra cooling during peak hours. The cell units are available with tank sizes from 23 by 72 by 38 in., to 42 by 120 by 84 in. These units are said to be especially well-suited to churches, banquet halls, auditoriums, office buildings, retail stores, homes, etc., where stepped-up cooling for brief periods is required. Dole Refrigerating Co., 5910 North Pulaski Rd., Chicago 30, Ill.

Thermostat for Radiant Heating Systems

Sarcotherm Surface-Type Thermoray, a thermostat sensitive to convection air temperature and effect of radiant panels, is designed to function according to effective temperature, according to its developers. Although it is aimed at use with hot water radiant heating systems,

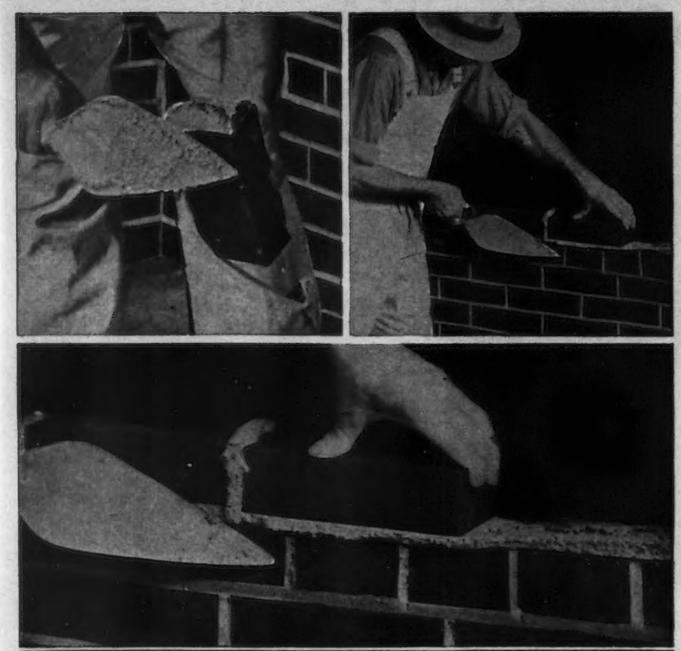


Thermostat is designed to function according to effective temperature

it also can be applied to the control of electric radiant heating panels. The instrument can be supplied with a double switch action for special control sequences, and can be used for line or low voltage circuits. Sarcotherm Controls, Inc., Empire State Bldg., New York 1, N. Y.

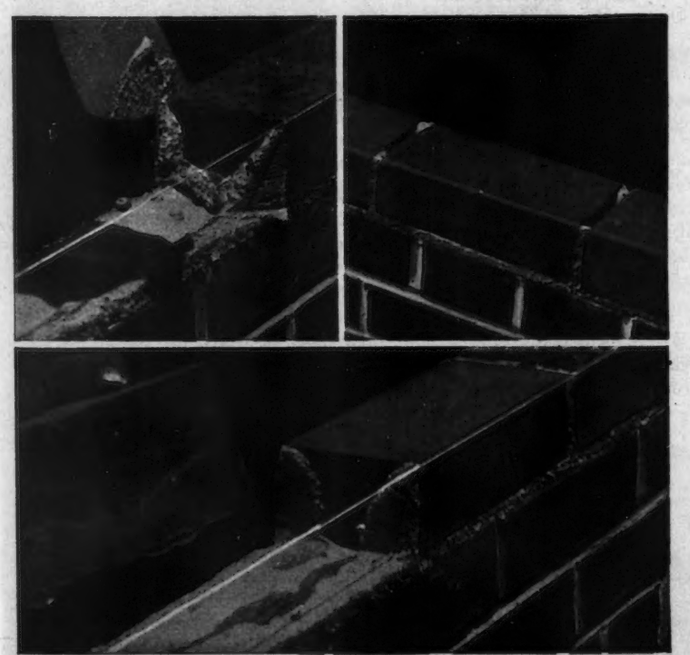
(*Continued on page 208*)

GOOD BRICKWORK = GOOD DESIGN + GOOD WORKMANSHIP + GOOD MATERIALS



GOOD WORKMANSHIP

Plenty of mortar should be thrown on the end of the brick to be placed. The brick should then be pushed into place, so that mortar oozes out of the head joint.



POOR WORKMANSHIP

When dabs of mortar are spotted on the corners of the brick, the mortar does not completely fill the head joint, and voids are still left.

FULL HEAD JOINTS, WITH BRIXMENT, HELP PREVENT LEAKY WALLS

WE SUGGEST THAT—

All head joints in both face brick and back-up work should be completely filled with mortar. If head joints are not completely filled, water may penetrate to the inside of the wall through openings in the joints. *Dabs of mortar spotted on the corners of the brick are not nearly enough to fill the joints.*

Take a look at the two examples shown at the left, and you'll instantly see why full head joints are an essential part of *good workmanship* in bricklaying.

No mortar material alone, not even Brixment, can make watertight masonry walls, so long as open crevices and pockets are left in the mortar joints.

Brixment mortar makes it far easier for the bricklayer to do good work. It is smooth and plastic—so soft and workable that the bricklayer can use enough mortar to fill the joint, and still "place" the brick easily and accurately to the line.

Brixment mortar has greater plasticity, higher water-retaining capacity and bonding quality, greater resistance to freezing and thawing, and freedom from efflorescence. Because of this *combination* of advantages, Brixment is the leading masonry cement on the market.

LOUISVILLE CEMENT COMPANY, Incorporated, LOUISVILLE, KENTUCKY

How many classrooms in a cafeteria?



"MODERNFOLD" DOORS have the answer

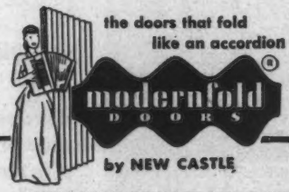
You're looking into a college cafeteria that leads a double life. At lesson time the "Modernfold" doors fold together to form much needed classrooms. At lunch time these steel-framed, accordion-type doors fold back to the wall—and quickly convert the classrooms into a cafeteria.

You keep clients happy when you give them more room—without having to add costly extra floor space. And that's exactly what they get when you specify "Modernfold" doors. As shown above, they're a "natural" for economical and flexible room division. And, as conventional doors, they *save the space that swinging doors waste.*

Economical? Definitely. "Modernfold" doors are moderate in first cost, and maintenance is practically nothing. Their handsome vinyl covering—in colors to match any decorating scheme—is fire-resistant . . . resists chipping, peeling, cracking, and fading . . . washes clean with soap and water.

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Gentlemen: Send information on "Modernfold" doors.

Name.....

Address.....

City.....*County*.....*State*.....

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PRODUCTS

(*Continued from page 206*)

Sectional Overhead Garage Door

An all-steel, four sectional garage door, the *Roly-Door*, is said to insure effortless opening and closing at finger touch, to be rattle- and weather-proof and to neither warp nor corrode. *Roly-Door* operates within the garage, has no protruding obstructions. Because of complete fabrication at the factory, installation and operation are claimed simple as well as time- and labor-saving.



Prefabricated, sectional garage door is designed for easy installation

A new model of *Roly-Door* is 9 by 7 ft, and also on the market is the 8 by 7 ft, door, both of which are adaptable to a 6 ft 6 in. opening where sufficient headroom is available. The door is said to have ample radius curve tracks to provide a smooth operation, and beveled metal strips to eliminate friction. It is equipped with a simple hinging device. Prime coated at the factory, the door is said to take any ordinary house paint. Roly-Door Div., Morrison Steel Products, Inc., 601 Amherst St., Buffalo, N. Y.

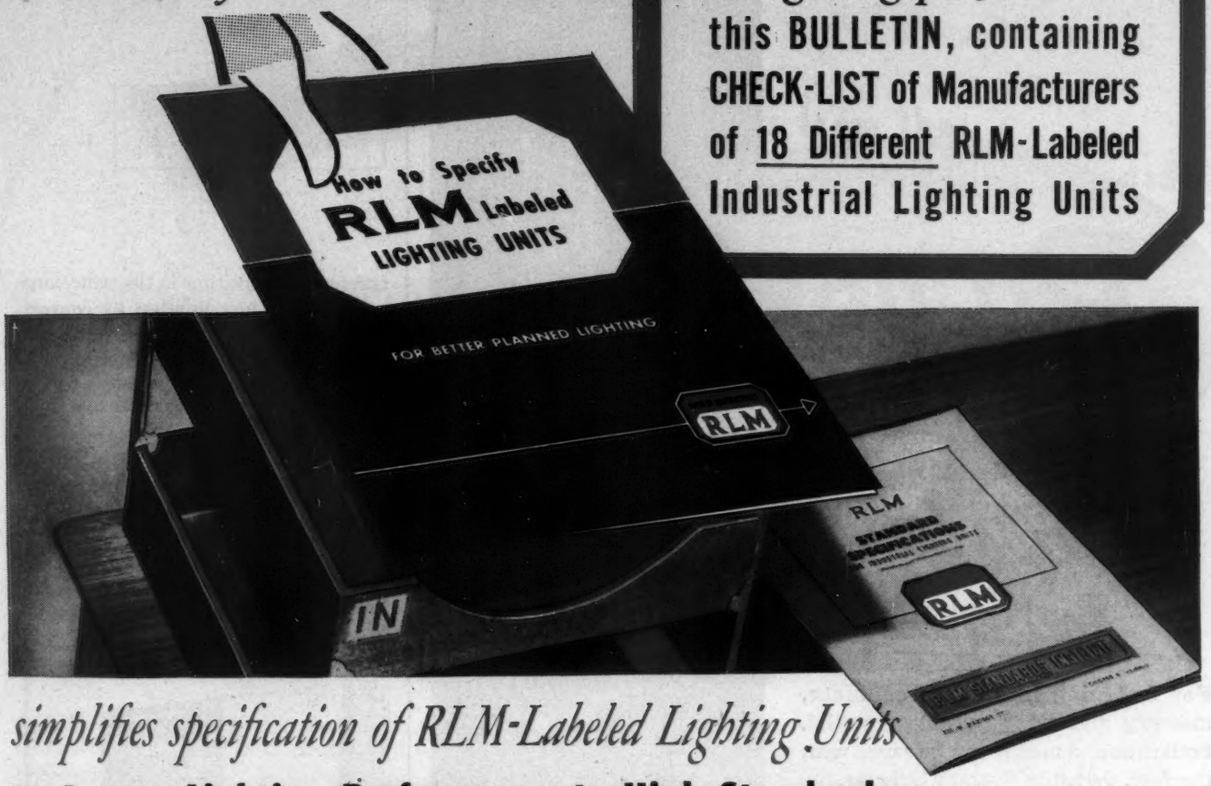
Electric Ranges

Featured in the 1951 line of *Frigidaire Electric Ranges* is the "Wonder Oven," which is said to permit the preparation of different foods at different tempera-

(*Continued on page 210*)

needed by Architects with industrial lighting projects:

this BULLETIN, containing CHECK-LIST of Manufacturers of 18 Different RLM-Labeled Industrial Lighting Units



simplifies specification of RLM-Labeled Lighting Units

to Assure Lighting Performance to High Standards Demanded by Defense Plants and Essential Industries

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Featuring an easy-to-use chart, the bulletin enables you to quickly determine: (1) whether or not a certain size and type of unit is RLM certified; (2) the names of all manufacturers who make RLM-labeled units of the type and size desired; (3) the names of manufacturers and the types of lighting units which they currently have on submittal to the Electrical Testing Laboratories for test and certification.

The bulletin supplements the RLM SPECIFICATIONS BOOKLET which contains all RLM Specifications in effect as of March, 1950. When used in conjunction with the Specifications Booklet, the bulletin will prove of important assistance in the procurement of lighting equipment that meets nationally recognized standards of quality and performance.

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FASTENING SYSTEM
Pioneer in powder-actuated fastening

PRODUCTS

(*Continued from page 208*)

tures at the same time in the same, large oven. This is accomplished by converting the large single oven into two separate small ovens by means of a movable, shelf-like unit which seals off the two sections.



1951 range features large oven with movable divider, dual controls

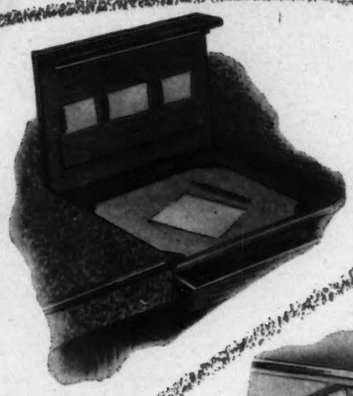
The upper half of the oven has two heating units — a permanent one in the roof and one in the top side of the movable unit. Thus, this half may be used for broiling as well as baking or roasting. The lower half is equipped with a single, permanent, bottom heating unit. There are separate controls for each section of the oven.

Another feature is that the two small ovens can be converted into a single 6160 cu in. oven by moving the center shelf-unit into the bottom. This special oven is available on the RO-60 and RO-50 models.

Additional features on the above models are: new electric time signal, new large-size storage drawers and preheat oven control. Frigidaire Division, General Motors Corporation, Dayton 1, Ohio.

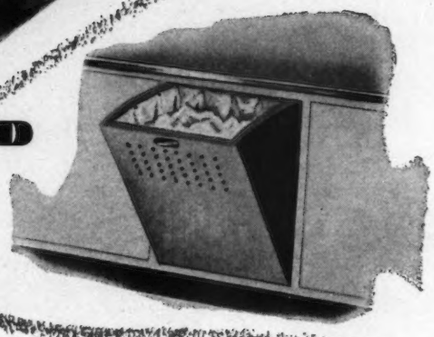


usable ideas from the CONSOWELD room planning guide



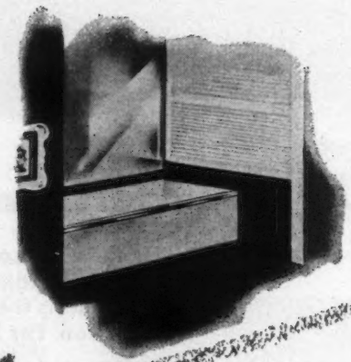
Convenient is the word for this built-in kitchen desk. Merely close the lid to restore valuable counter area.

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Handy hamper helps keep bath neat . . . as do CONSOWELD surfaces which wipe sparkling clean with a damp cloth.

Seat-and-bin combination smartly solves the what to do with galoshes and rubbers problem. It's CONSOWELD-covered, of course.

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In these days of critical shortages—when men and money and material must be used to the very fullest—there is one method of building that truly meets the need on every count—it's Ceco's Meyer steelform construction. For here is a building way that saves as it serves:

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Saves money by saving concrete . . . the "dead load" is kept at a minimum. Too, less lumber is needed. Removable steelforms can be reused: thus only a nominal rental fee is charged.

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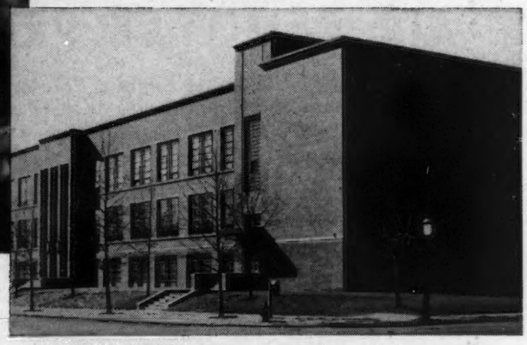




INDUSTRIAL BUILDINGS — Ceco's Meyer steelform method speeds construction: the simple skeleton centering goes up fast; the forms are quickly placed and removed by unskilled labor.



HOSPITALS—Ceco Concrete Floor Joist Construction is ideally suited to hospitals since it provides fire-safe, sound-proof buildings at economical cost. Widely used in Veterans Hospitals.



SCHOOLS—Safe, low-cost construction is assured: concrete is kept at the minimum required for the live load. Saving in dead load reduces costs throughout the structure.



CONCRETE JOISTS eliminate much of the concrete below the neutral axis, saving money, saving material. Suited to buildings with long spans: stores, offices, apartments, hotels.

Concrete Joist Construction

Saves material because only a minimum of critically short steel is needed. Less concrete is necessary than required by other concrete floor constructions.

Ceco originated the removable steelform method of concrete joist construction. The company is first in the field—providing more services than all competitors combined. So call on Ceco . . . the leader over all.

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The highly efficient Burt Free Exhaust Fan Ventilator exhausts an unrestricted column of air vertically upward at high velocity. Full-opening dampers open automatically when its Burt Axial Flow Airfoil Fan is operating—close automatically for thorough weather-proofing when motor is shut down.

If you require rapid spot removal of air contaminated with smoke, fumes, dust and heat, the Burt F.E.F. Ventilator is the most efficient unit for you. It is one of the many types in Burt's complete line of ventilators. See Sweet's or write for Bulletin S.P.V. 18.

Equipped With

BURT AXIAL FLOW AIRFOIL FAN



Aerodynamically designed for the rapid removal of air. Center hub is cast solid, with blades attached separately to permit prestressing and elimination of blade breakage at hub juncture. Each fan is balanced and test run at factory.

FAN & GRAVITY VENTILATORS • LOUVERS • SHEET METAL SPECIALTIES

The Burt Manufacturing Company

48 E. South St., Akron 11, Ohio

LITERATURE

(Continued from page 164)

Reinforced Concrete

The following pamphlets and reprints on new developments for reinforced concrete are available from the Committee on Reinforced Concrete Research, American Iron and Steel Institute:

• *New-Style Deformed Reinforcing Bars (Title No. 46–48)*, by Raymond C. Reese. (Reprinted from the Journal of the American Concrete Institute, May, 1950.) Pamphlet tells the how and why of the development of "improved" reinforcement for concrete. Tables give dimensional requirements for bars. Also covered are: types of bars and revisions in design practice. 8 pp., illus.

• *Steel Reinforcing Bars. Simplified Practice Recommendation No. 26–50* (supersedes R26–49). Pamphlet deals with recommended simplified list of sizes of steel reinforcing bars, effective August, 1950. Tables give data. 15 pp., illus. Commodity Standards Division, Office of Industry and Commerce, U. S. Dept. of Commerce, Washington 25, D. C.

• *ASTM Specifications for Steel Bars for Concrete Reinforcement.* Booklet gives tentative specifications for Billet-Steel Bars, Rail-Steel Bars, Axle-Steel Bars. Also gives minimum requirements for deformations of deformed steel bars. Data and tables are included. 14 pp. American Society for Testing Materials, 1916 Race St., Philadelphia 3, Penna.

• *Reinforced Concrete Wall and Column Footings (Title No. 45–6a)*, by Frank E. Richart. (Reprinted from the Journal of the American Concrete Institute, October and November, 1948.) Pamphlet presents results of research at University of Illinois. The study is said to be the first extensive one since 1913. Tables and graphs give data on tests. 62 pp., illus.

• *Bond of Concrete Reinforcing Bars (Title No. 46–11)*, by Arthur P. Clark. (Reprinted from the Journal of the American Concrete Institute, Novem-

(Continued on page 216)

A. I. A. FILE #23-D

There's a Kentile color for every flooring need

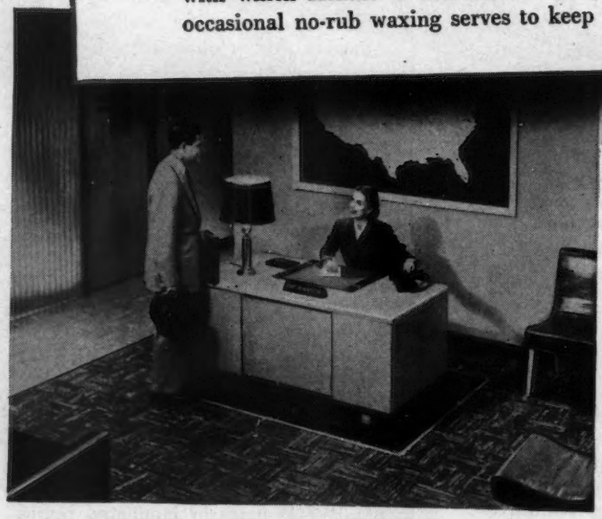
Kentile Asphalt Tile is available in a wide range of marbleized colors in both Kentile and Special Kentile (grease-proof) grades. The stock sizes for both Kentile and Special Kentile are 9" x 9" with other sizes available on special order. Thicknesses are $\frac{1}{8}$" and $\frac{3}{16}$".

Residential—Today's architectural designs call for the planned use of modern decorator colors. Kentile offers the specifier of flooring materials a wide choice to allow an almost infinite choice of design and color.

Commercial—The wide range of Kentile colors provides an almost infinite choice of decorative schemes...to fit in with the plan of any commercial interior; store, restaurant, theater. The bright, cheery appearance attracts customers...captures the attention of passers and "impulse" buyers.

Industrial—The proper atmosphere in plant or factory is one of the most important elements in maintaining worker efficiency...production levels. One of the best ways to achieve this atmosphere is by the use of pleasing color with Kentile Floors and Walls.

An added advantage of Kentile Floors for any installation is the ease and economy with which Kentile is maintained...only mild soap and water cleanings plus an occasional no-rub waxing serves to keep floors clean and colors sparkling new.





✓ *SPECIFY KENTILE BY NAME because of its...*

...**appearance**—a complete range of marbleized colors in Kentile and SPECIAL Kentile. Also, feature strips, decorative inserts, edging and cove base.

...**installability**—Kentile can be applied over any interior smooth wood, metal or concrete surface...even below finish grade over concrete on fill in direct contact with the earth.

...**availability**—Over 3,000 Kentile dealers throughout the country assure prompt attention to your needs.

...**service**—Nine conveniently located Kentile, Inc. offices and a nation-wide system of trained representatives plus a comprehensive selection of technical literature, are available to help solve any flooring problem.

...**low cost**—Installed prices are lower than those of practically any flooring material; varying with size and condition of floor; colors and thicknesses chosen and freight rates. Accurate estimates are available from any Kentile dealer—listed under FLOORING in your classified phone directory.

The following literature is available on request and is designed to aid in the specifying of floors and walls for residential, commercial or industrial building or remodeling.

- ☐ Architects Specifications
- ☐ 16 Page Catalog—includes 4-color photos of Kentile installations
- ☐ Color Line Folder
- ☐ Kentile in Hospitals
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- ☐ Recommended and Not Recommended Uses for Kentile

Please write the Kentile, Inc. office nearest you.

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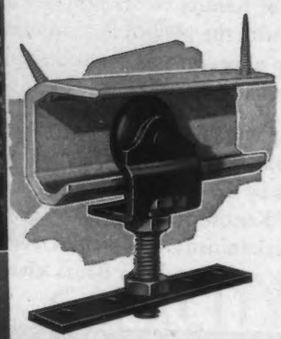
The Asphalt Tile of Enduring Beauty

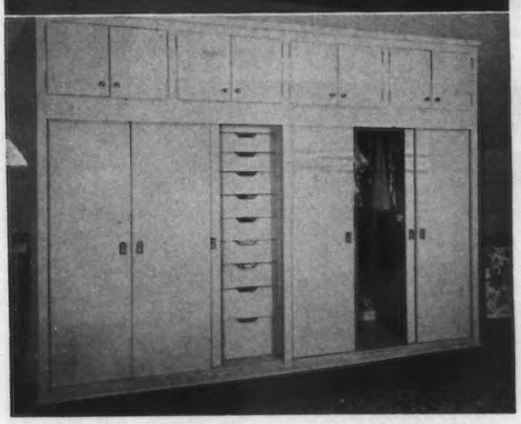
KENTILE, INC., 58 Second Avenue, Brooklyn 15, New York • 350 Fifth Avenue, New York 1, N. Y. • 705 Architects Building, 17th and Sansom Streets, Philadelphia 3, Pennsylvania • 1211 NBC Building, Cleveland 14, Ohio • 225 Moore Street, S.E., Atlanta 2, Georgia • 2020 Walnut Street, Kansas City 8, Missouri • 1440 11th Street, Denver 4, Colorado • 4532 South Kolin Avenue, Chicago 32, Illinois • 1113 Vine Street, Houston 1, Texas • 4501 Santa Fe Avenue, Los Angeles 58, California • 95 Market St., Oakland 4, Calif. • 452 Statler Building, Boston 16, Mass.

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SILVER STREAK
R-W No. 1019
Vanishing Door
Hangers and
Aluminum Track

Today's greater demand for small homes makes the full utilization of every inch of space more imperative than ever. And the answer to this need is an entirely new Vanishing Door Hanger by Richards-Wilcox that is designed for thin-wall installation and noiseless operation. R-W Silver Streak Vanishing Door Hangers and Aluminum Track are adapted for use on parallel residential wardrobe doors, or for any doors in any room of the house. Note these points of special importance to you and your customers:

- Four types of hangers to accommodate various size doors and building requirements.
- Bronze hanger and aluminum track to withstand salt air for seaboard use.
- Adapted to thin wall to save space and reduce building costs.
- No interference with room furnishings or decorations.
- Tight fit of door to floor avoids drafts, loss of heat.
- Adapted to single sliding and parallel sliding house doors.

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For more information, contact our nearest office or request one of our illustrated folders describing in detail the uses and advantages of SILVER STREAK.

1880 RICHARDS WILCOX R-W AURORA 1951 OVER 71 YEARS

Richards-Wilcox Mfg. Co.
A HANGER FOR ANY DOOR THAT SLIDES
AURORA, ILLINOIS, U. S. A. • Branches in all principal cities

Architectural Engineering

LITERATURE

(*Continued from page 214*)

ber, 1949.) Booklet reports on tests made at the National Bureau of Standards to compare resistance to slip in concrete (bond) of deformed bars when tested in beams and companion pull-out specimens. Purpose of tests was to secure information on effects of size of bar, type of deformations on the bars and strength of concrete on the bond. 23 pp., illus.

Single copies of above booklets are available free of charge from Committee on Reinforced Concrete Research, American Iron and Steel Institute, 350 Fifth Avenue, New York 1, N. Y.

Decorative Wallboard

Arborite Decorative Wallboard. An assortment of colors for wallboard are shown in this brochure, together with suggestions for use of the material in kitchens, bathrooms, recreation rooms, etc. Specifications for the wallboard are included. One section is devoted to instruction in installation. 2 pp., illus. The Arborite Co., Ltd., 385 Lafleur Ave., Ville LaSalle, Montreal 32, Que.

Wood Structure

Permanent, Functional Industrial Buildings through Engineering in Wood (TSG 6). Booklet describes application of laminated wood for use in prefabricated trusses, beams, girders, columns, craneways, arches and rigid frames. Photographs and diagrams illustrate many of these structures. Sizes and properties of standard Douglas fir laminated beams with 1⅝ in. laminations are given, and charts indicate the dimensions, sizes and weights of typical Tim-Truss, arch Teco and Tim-Flat roof trusses. 8 pp., illus. Timber Structures, Inc., Box 3782, Portland 8, Ore.

Mahogany

Philippine Mahogany for the Building and Furniture Industry. Booklet is a general summary of the varied uses of mahogany. Large-size color reproductions show the wood as paneling and flooring and used in furniture pieces for the church, home, etc. The wood is shown in three finishes. 12 pp., illus. Philippine Mahogany Assn., Inc., 111 West Seventh St., Los Angeles 14, Calif.

(*Continued on page 218*)

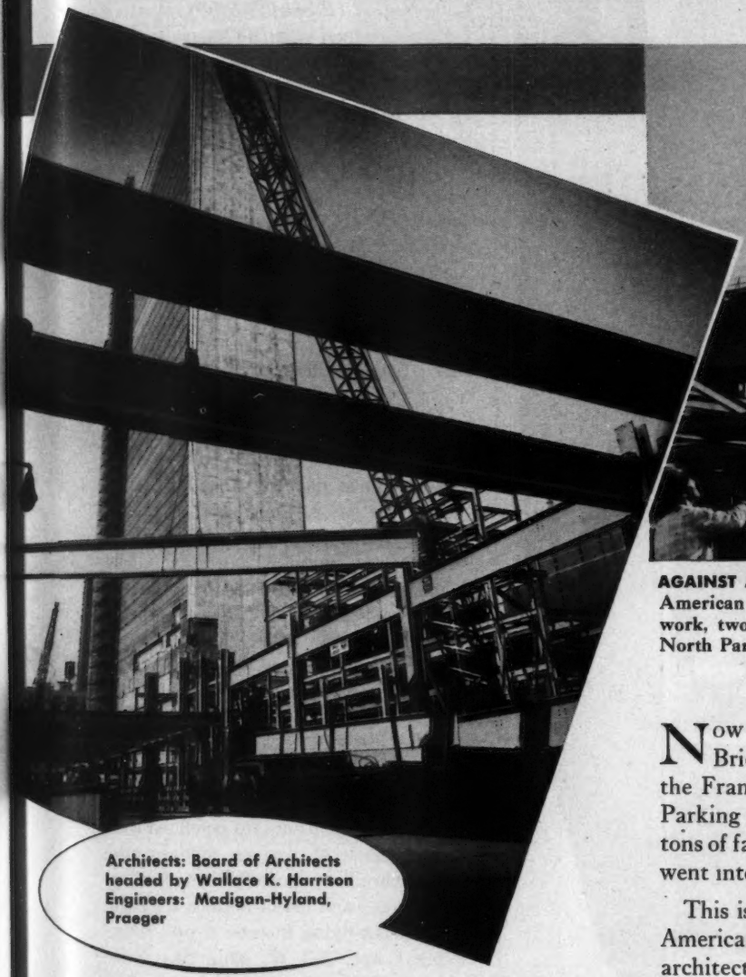
3 new structures for the United Nations

...fabricated and erected by the

AMERICAN BRIDGE COMPANY



AGAINST A BACKGROUND of the completed UN Secretariat Building, for which American Bridge Company fabricated and erected 13,800 tons of structural steelwork, two bridgemen direct the unloading of steel columns and beams for the North Parking Space at the UN site.



Architects: Board of Architects headed by Wallace K. Harrison
Engineers: Madigan-Hyland, Praeger

AMERICAN BRIDGE BEGINS erection of the steel framework for the cover of the Franklin D. Roosevelt Drive at the UN Headquarters. Eventually the entire drive from 42nd St. to 48th St. at East River will be covered. In the right foreground steel framework for the Meeting Halls Building can be seen. When completed, this building will extend, by cantilever construction, over the drive to the edge of the river.

Now that the U N Secretariat Building is completed, American Bridge is erecting the Meeting Halls Building and cover for the Franklin D. Roosevelt Drive, General Assembly Hall and North Parking Space. When finished these structures will contain 18,600 tons of fabricated steel framework, in addition to the 13,800 tons which went into the Secretariat Building.

This is typical of how the time-tested and proved experience of the American Bridge Company has been linked to the latest in modern architectural and engineering design to create structures of unusual beauty and enduring strength. Hundreds of steel-framed buildings all over the country are proof that for sturdy, economical structural work you can't beat rigid steel construction—and for varied experience ... unexcelled facilities ... trained personnel, you can't go wrong when you depend on American Bridge.

AVAILABLE NOW! *For showing in churches, schools, clubs, and industries, the new sound and color motion picture—BUILDING FOR THE NATIONS—a candid, factual photographic record of the highlights of the fabrication and erection of the United Nations' Secretariat Building in New York City.*

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UNITED STATES STEEL EXPORT COMPANY, NEW YORK

USS TRADE MARK

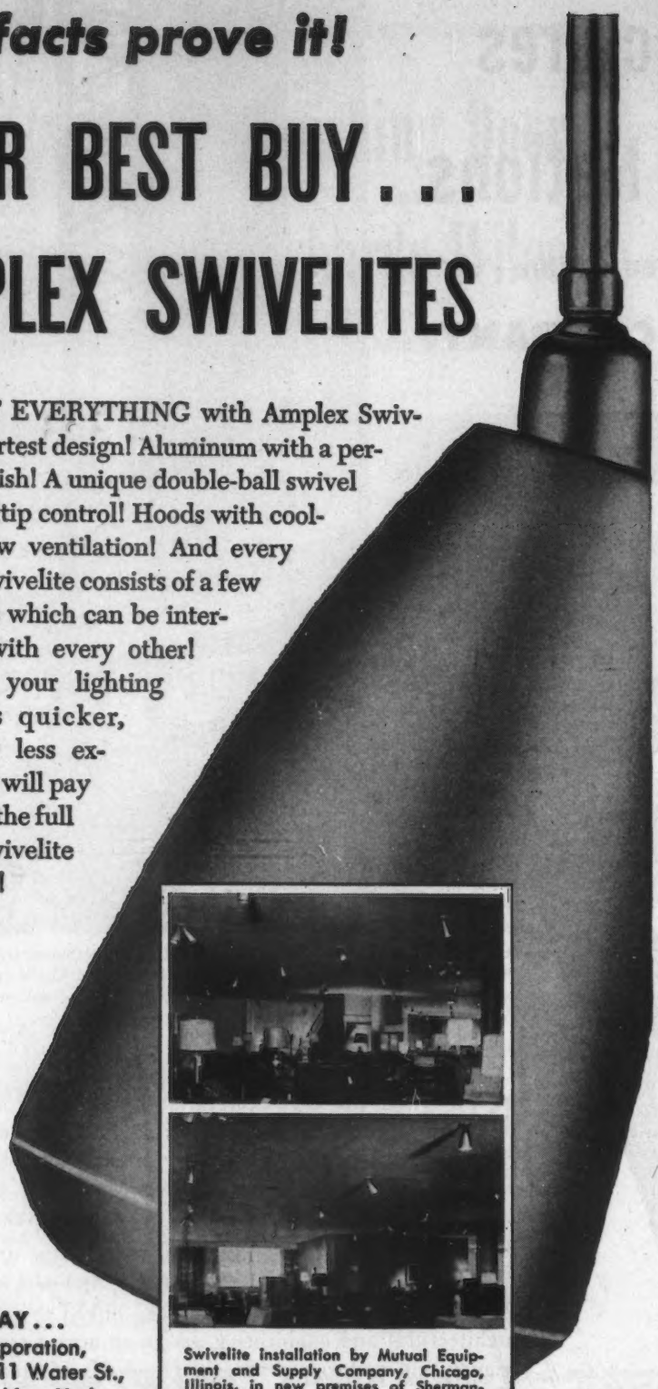
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UNITED STATES STEEL

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YOUR BEST BUY...
AMPLEX SWIVELITES

YOU GET EVERYTHING with Amplex Swivelites. Smartest design! Aluminum with a permanent finish! A unique double-ball swivel with fingertip control! Hoods with coolest, air-flow ventilation! And every Amplex Swivelite consists of a few basic units which can be interchanged with every other! Changing your lighting effects is quicker, easier, far less expensive. It will pay you to get the full Amplex Swivelite story, now!



Swivelite installation by Mutual Equipment and Supply Company, Chicago, Illinois, in new premises of Sherman-Karpen Furniture Company.

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LITERATURE

(*Continued from page 216*)

Air Conditioning Planning Guide

A Planning Guide for Commercial Air Conditioning (*Booklet B-5159*). Written for businessmen with no specialized or technical knowledge of air conditioning, this booklet deals with the five functions an air-conditioning should perform, and the six components needed to do this job. Various types of systems are covered. Each kind of equipment is illustrated, and details are given of manufacturer's products. 20 pp., illus. Westinghouse Electric Corp., Sturtevant Division, 200 Readville St., Hyde Park, Boston 36, Mass.*

Data Sheet Handbook

Pittsburgh Data Sheet Handbook (*replacing 1947 edition*). Booklet contains many important changes from earlier text. Products covered include: Pennvernon, Plate Glass, Twindow, Mirrors, Carrara Structural Glass, Doorways, Pittco Metal, Tublite Doors, PC Glass Blocks, Mississippi Glass, Glass Specifications and Paints. Tables give data; detail drawings are also included. 68 pp., illus. Pittsburgh Plate Glass Co., 632 Duquesne Way, Pittsburgh, Pa.*

Insect Control

Fly Control. Leaflet describes operation of electrically-charged fly screens. Suggested installations are given, as well as dimensions of various models and details. Also illustrated are electrocuting garden panel and insect lantern for control of night-flying insects. 6 pp., illus. Detjen Corp., 303 W. 42nd St., New York 18, N. Y.

LITERATURE REQUESTED

The following individuals and firms request manufacturers' literature:

C. S. Goldberg, 205–17 Hollis Avenue, Hollis 7, N. Y.

Roland L. Robel, Architect, 309 Western Surety Bldg., Sioux Falls, S. D.

Martin Shapiro, Architect, 129 Railroad Ave., Jersey City 2, N. J.

Only a good Thermostatic Water Mixer Can Prevent Accidents Like These

Baby Girl Scalded in Bath Tub

A 14-months-old girl was burned critically today when she turned on scalding hot water while she was being bathed in the [redacted]

Mrs. Johnnie Mason, attendant at the nursery, said she was bathing Joan about 11:30 a. m. today just before the child turned on the hot water faucet.

'Heard a Scream'

"I stepped in the next room to get a towel," Mrs. Mason said, "and heard a scream. I ran back and grabbed her out of the tub." She said Joan stood up in the bath tub to operate the faucet.

Joan Dodd, daughter of

ALMOST "BOILED ALIVE" IN APARTMENT HOTEL SHOWER

Seeking $40,000 damages for her injuries, Miss Rosalie B. Chivington, living at [redacted] a school teacher, yesterday in the Superior Court described how she was almost "boiled alive" in her shower in [redacted] Apartment hotel.

"I set the handle of the shower mixer at Warm," Miss Chivington testified. "Instantly a flood of scalding water was poured upon me, I slipped and fell into the tub."

"Unable to see because of

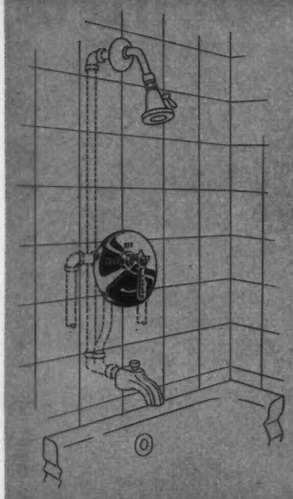
"BOOBY TRAP SHOWERS" are old-fashioned dangerous and expensive





Only ONE shower or tub accident may cost many times more than a

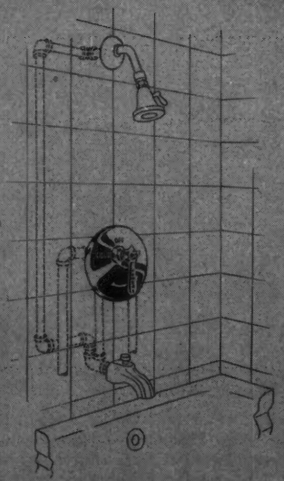
POWERS



POWERS Type HVC Thermostatic Water Mixer For Concealed Piping. Dial Diam. 6". Connections ½".

TYPICAL SHOWER & TUB COMBINATIONS

with Diverter Spout and Fitting.



Unsurpassed for SIMPLICITY CONVENIENCE COMFORT SAFETY

Contact your nearest POWERS office for specification data

THERMOSTATIC WATER MIXER

Safety tests prove it will outperform all other thermostatic or pressure actuated mixers

How it works—Hot and cold water are piped to mixer where they are blended and thermostatically controlled at any temperature desired between 60° to 115° F. (Note safety limit).

For shower or tub bath, Powers mixer handle is turned to right until water flowing into tub reaches temperature desired. Then bather enters tub. For a shower, diverter spout knob is pulled up diverting water to shower head. When shower is completed, handle of mixer is turned to OFF. Diverter spout flapper valve returns to "tub" position automatically.



Only one moving part easily accessible from the front. Minimum of maintenance, simple, rugged construction.

Safety Features that give better control: (1) Powers mixers prevent delivery to shower or tub above 115° F., (2) Temperature remains *constant* wherever set regardless of *pressure* or *temperature* changes in water supply lines, (3) Failure of cold water supply instantly and completely shuts off delivery to shower or tub.

Powers thermostatic water mixers are completely automatic, convenient, dependable and the safest temperature regulator made for tub and shower combinations.

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Established 1891 • OFFICES IN OVER 50 CITIES • See Your Phone Book
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MEXICO, D. F., Edificio "La Nacional" 601 (H2C)

60 YEARS OF WATER TEMPERATURE CONTROL



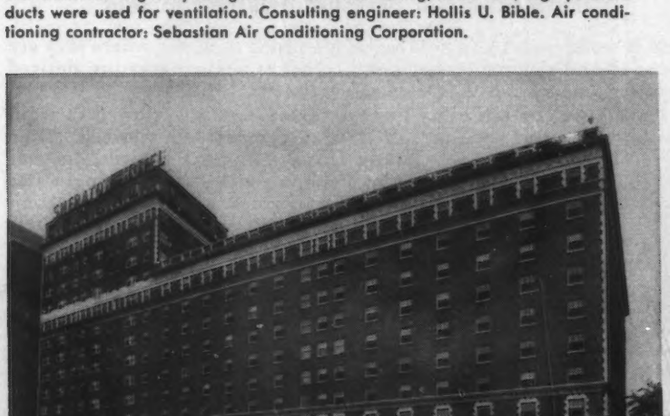
AIR CONDITIONING SYSTEMS

In Houston,
St. Louis, New York...

G-E Personal Weather Control

is saving space,
cutting cost

"BEST AIR CONDITIONING JOB in an existing building in Texas," says Paul E. Wise of Houston's Sterling Building, one of many recent G-E Personal Weather Control installations. To save space, particularly important in existing buildings that were not originally designed for air conditioning, small-size, high-pressure ducts were used for ventilation. Consulting engineer: Hollis U. Bible. Air conditioning contractor: Sebastian Air Conditioning Corporation.



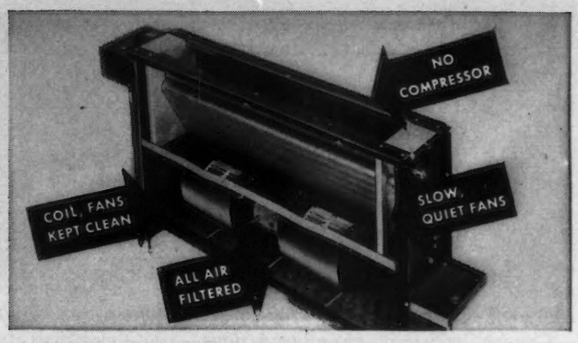
SHERATON HOTEL IN ST. LOUIS installed a G-E Personal Weather Control System in 1949. Expressing "complete satisfaction," Sheraton Corporation has since installed these systems in its hotels in many other cities. Units in unoccupied rooms can be shut off, saving power cost. They filter air, keeping coils clean and at top efficiency. Air conditioning contractor: Natkin and Company.



LUXURIOUS APARTMENTS now being built at Sutton Place South, 53-54 Sts., New York City, will give tenants individual climate control with over 1200 G-E room units. General contractor: Paul Tishman Company, Inc. Architect: Arthur Weiser. Consulting engineer: Rutherford L. Stinard. Air conditioning contractor: Raisler Corp.



COMPACT, 9-INCH DEEP UNITS in each room take little space, yet circulate air gently through large area. Units are supplied with attractive cabinets (above) or without cabinets for concealed applications. Simple pipe runs circulate chilled water for summer air conditioning, hot water for winter heating. Windows are never blocked.



EXTRA-EFFICIENT, QUIETER! G. E.'s room units filter all air, protecting coils from dust and dirt which cut efficiency drastically. Filter replacement takes less than a minute—it's much simpler and cheaper than costly coil cleaning. G-E units are quiet! There's no compressor in the room unit, just the quiet G-E motor and velvet-smooth, low-speed fans.

Consider how G-E Air Conditioning can make your building more profitable

Because space means money in both new and existing buildings, General Electric Personal Weather Control Systems have been designed for installation with small-size, space-saving ducts or no ducts at all.

These extremely flexible systems heat in winter and cool in summer. Individual room air conditioners (shown above) are supplied with chilled or hot water through simple pipe runs from a central source.

In new buildings, such as the apartments at Sutton Place South, 53-54 Sts., (at left) New York, the use of wall apertures for ventilation eliminates the need for ductwork and cuts installation cost. In existing buildings such as Houston's Sterling Building and the Hotel Sheraton in St. Louis, adaptability of ventilation methods to individual needs avoids the necessity of building alterations.

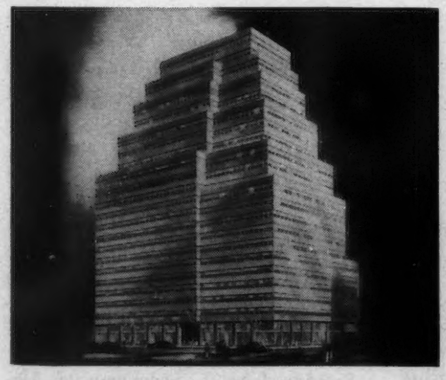
Flexibility Means Economy...Future space rearrangement is simplified by the use of G-E room units because of their flexibility in capacity. G-E Air Conditioning pays off in operating cost reduction, too. During periods of system start-up or reduced occupancy, the room units can be operated without the expense of running central ventilation equipment. Units in unoccupied rooms can be shut off. G-E systems often require less compressor capacity, saving both installed and operating cost.

Building Value Increases...Tenants enjoy living or working where they get individual finger-tip control of climate without disturbing other rooms. Greater tenant satisfaction means lower turnover, more profitable occupancy.

Cuts Maintenance Cost..."Never had to replace one," says Clay J. Berry of the Fair Building, Fort Worth, Texas, where 500 G-E room units have been in use since 1939.

"Maintenance cost has been no factor, and operating cost has been surprisingly low," says E. F. Puls, National City Building, Dallas, Texas.

Owner satisfaction like this is one of the reasons why G-E Personal Weather Control is going into buildings like New York's new Dun and Bradstreet Building...12 Sheraton Hotels...and banks, hospitals, and other structures in many parts of the country.



NEW G-E CENTRAL PLANT SYSTEM for New York City building. The beautiful new 25-story office building at 575 Madison Avenue uses 43 G-E large-space air conditioners. To save ductwork, units are installed on all floors. General contractor: Uris Brothers. Architect: Emery Roth & Sons. Consulting engineer: Rutherford L. Stinard. Air conditioning contractor: Raisler Corp.

See our catalog in Sweet's

FREE! Data on G-E Air Conditioning Systems



GENERAL ELECTRIC COMPANY,
Air Conditioning Department, Sec. ARC8,
Bloomfield, N. J.

Please send me without obligation detailed information on

☐ G-E Personal Weather Control

☐ G-E Central Plant Air Conditioning

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COMPANY.....

ADDRESS.....

CITY.....STATE.....

GENERAL ELECTRIC

WASHINGTON *(Cont. from p. 26)*

position centered in a letter from the National Electrical Contractors Association to the National Production Authority. The letter was written by E. R. Cornish, director of N. E. C. A.'s Research and Education Department, and addressed to Frank R. Creedon, assistant administrator of NPA in charge of construction and facilities.

Cornish criticized recommendations to NPA which resulted from a round-table panel discussion, sponsored some weeks ago by the *Magazine of Building*. N. E. C. A. says that these published recommendations "pretend to say how building costs could be reduced by 30 percent and how substantial savings in critical metals could be effected."

The trade association maintains that 90 per cent of home wiring today is on an "electrical starvation standard." As stated in the letter, the typical low-cost home of 1000 sq ft contains in its electrical system only one fourth the amount of copper and about one one-hundredth the amount of steel used in an automobile. The cost of the electrical system is usually about one per cent and never more than two per cent of the selling price of the home. Regardless of what wiring method is used, Cornish stated, the minimum amount of copper to give even a marginal service to this type of home is about 20 pounds. Steel requirements range from 22 pounds for nonmetallic systems, which do not give grounding protection, to 415 pounds for rigid conduit which is used in perhaps less than one per cent of the homes built.

FACTS FOR ARCHITECTS

ABOUT "CONSTRUCTION BY ADHESION"*

MIRACLE ADHESIVES CORP.
214 E. 53 St. • New York 22, N. Y.
"CONSTRUCTION BY ADHESION"
*Reg. U.S. Pat. Off.

HERE ARE NEW METHODS WHICH MEAN SUBSTANTIAL SAVINGS IN LABOR AND MATERIALS FOR MODERN CONSTRUCTION in both *NEW* building and *MODERNIZATION*

WRITE TODAY FOR RECOMMENDED SPECIFICATIONS ON
1. Setting Genuine Clay Tile. 2. Insulating Ducts. 3. Insulating walls and ceilings either by Direct Adhesion or in conjunction with Surface Anchors. 4. Installing floor runners; bonding furring strips.

1.



Today it is normal procedure to install clay tile in hotel bathrooms without losing a night's revenue. This illustration shows one of the 144 rooms in the White Plaza Hotel, Dallas, Texas, in which MIRACLE ADHESIVE was used to do the job from the time the guest left his room in the morning until he returned that afternoon.

2.



Plaster applied over wire and cork which has been attached to aluminum ducts using MIRACLE ADHESIVE and MIRACLE SPINDLE ANCHORS at John Hancock Mutual Life Insurance Co. Building, Boston, Mass. ARCHITECT, Cram and Ferguson. BUILDER, Turner Construction Co.

3.



FIBERGLAS insulation, Type PF-513, 2" thick — bonded to concrete ceiling using MIRACLE PRONGED ANCHORS at Radio City Studio 6B, New York, N. Y. CONTRACTOR, William J. Scully, Inc., New York, N. Y.

4.



WOOD RUNNERS installed on concrete floors with MIRACLE ADHESIVE and MIRACLE ANCHOR NAILS to support 2" solid partitions. Washington Circle Apartments, Washington, D.C. GENERAL CONTRACTOR, Charles H. Tompkins Company.

VISIT MIRACLE EXHIBIT AT ARCHITECTS SAMPLES CORP. 101 PARK AVE., NEW YORK CITY

Builders Look to Memphis

While the housing standards controversy simmered with the NPA, private home builders turned their attention toward construction methods used in Memphis, Tenn., to produce some 2000 housing units at rental levels ranging from $33 to $50 per month.

Early in May, approximately 400 of the nation's leading home builders were to attend a conference in Memphis sponsored by the National Association of Home Builders. Avowed purpose of the meeting (May 3–5) was to study these economy rental units and find ways to develop financing techniques in following that pattern in every major city throughout the country. As an N. A. H. B. spokesman put it: "We are determined to find at this conference ways and means of constructing housing of similar quality and design in all cities throughout the country."

Memphis is considered the natural laboratory for studies of this kind. Half a dozen builders have produced low-rental developments in the vicinity.

Scheduled to take part in the sessions were top housing officials of the government including Raymond M. Foley, housing administrator; Franklin D. Richards, Federal Housing Administration commissioner; and Curt Mack, assistant FHA commissioner in charge of underwriting.

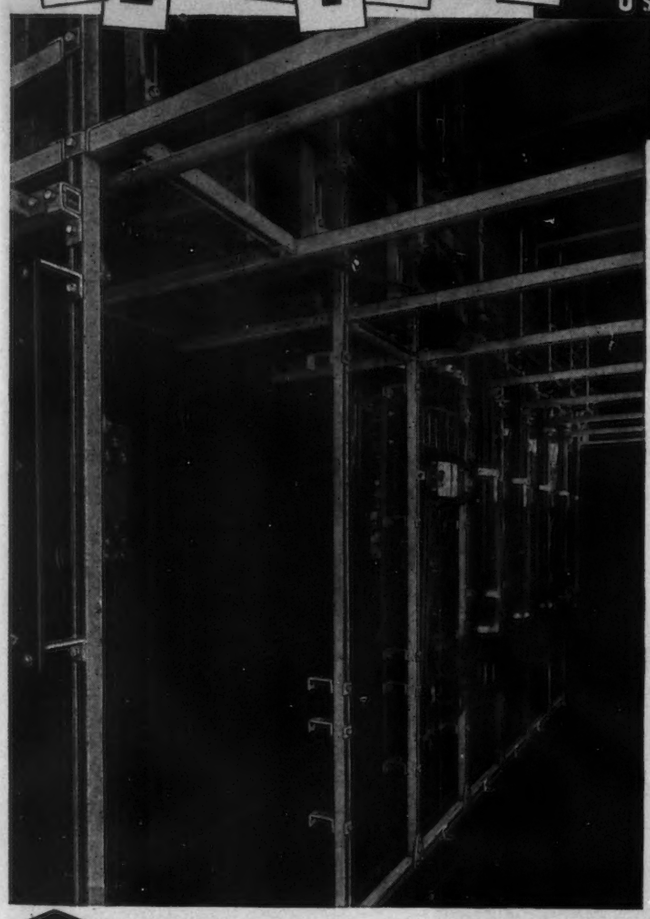
Senator John J. Sparkman of Alabama, chairman of the Banking subcommittee on housing and rents, was to take part in the round-table discussions, as was Representative Frank Buchanan of Pennsylvania, an active member of the House Banking committee on housing matters. Representative Jesse Wolcott of Michigan, ranking Republican member of the House committee, had

(Continued on page 224)

FLEXIBLE UNISTRUT

used in AMERICAN SUGAR REFINING COMPANY PLANT

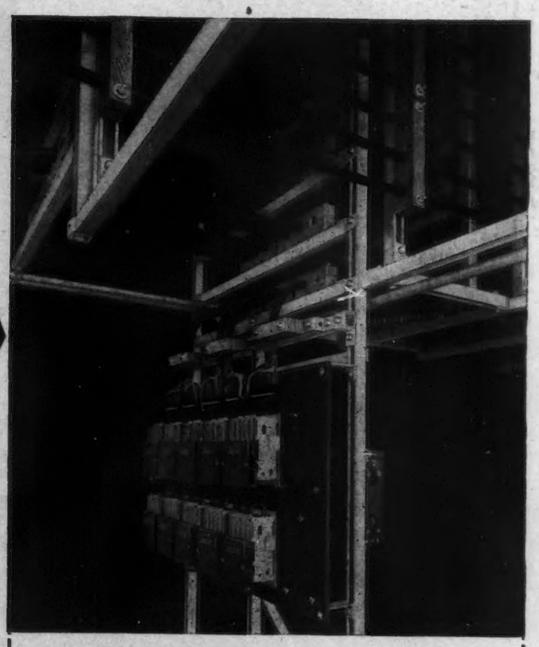
All Cable, Switchboards and Timer Control Panels Supported by Completely Adjustable Unistrut Framework



Note effective use of easily positioned maple cable clamps mounted on Unistrut channel.

These pictures show how Unistrut channel and fittings, with maple and porcelain insulators, combine to support all control equipment for the motors that operate centrifuges in one step of the sugar refining process at the Chalmette, Louisiana plant of the American Sugar Refining Company.

Unistrut permitted fast, on-the-job framing assembly where all adjustments were quickly made by merely loosening a bolt, and where supporting members were added as the work progressed. Because no drilling, welding, special tools or equipment are required to assemble Unistrut, engineering detailing and construction time were kept to a minimum. Another advantage lies in Unistrut's built-in flexibility which makes possible later changes and additions to the existing structure.



Installation is equipped throughout with Unistrut for the support of all motor control apparatus and cable.

With Unistrut you can build all types of framing, mounts, shelving, racks, tables and benches—conduit, cable, pipe and tubing hangers and supports, fluorescent fixture supports, and many other structures with just a hacksaw and a wrench. Give Unistrut a trial in your business.

FREE CATALOG and WALL CHART!

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2327587 2363382
2329815 2380379
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Name_____

Company_____

Address_____

City_____ Zone_____ State_____

WASHINGTON (*Cont. from p. 222*)

tentatively accepted an invitation to attend the Memphis meetings.

The meeting marks the first time in the Association's history that a national drive of this magnitude has been undertaken. The presence of outstanding mortgage lenders, architects and others in the home building field made this a particularly important meeting.

Builders attending from throughout the nation were to be given the opportunity to view the low-cost housing units first hand, and to discuss methods by which housing of similar size and design might be constructed in other parts of the country by the average builder under FHA sections 207, 213, 203 (b) (2) (A).

The conference was called by W. P. "Bill" Atkinson, Association president. Ted Kimbrough, president of the Home Builders Association of Memphis, and the Mayor of Memphis were hosts.

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SPECIFY "STANDARD" CLOCK SYSTEMS FOR SCHOOLS



1. Only one (heavy duty industrial type) motor used in the entire system.
2. Program mechanism continues during power failures; signals sound on correct time immediately on resumption of power.
3. Time dial and program are geared together — always synchronized.
4. No batteries of any kind — reserve power always available.
5. Simplest setting of program schedules; punch printed ribbon and place it on drum.
6. Special schedules may be set up on spare ribbons and interchanged in a moment. Extra ribbons furnished without charge.
7. Bell board allows placing any signal on any program schedule by changing position of plug on board; also permits manual ringing of any signal when required.
8. Automatic reset feature for secondary clocks allows individual setting — not only groups — keeping all clocks together.
9. Entire system is simple in design; fewer parts to require attention.

Master-Program Controller, Type SYN-S. Approx. Dimensions, 15" x 38" x 9".

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Other "Standard" Products for Schools: Fire Alarm Systems • Laboratory Panels (for Physics, Chemistry, Electrical Shops and Laboratories, Pharmacology, Psychology, etc.)

FOUNDED STANDARD 1884

THE STANDARD ELECTRIC TIME CO.

81 LOGAN STREET • SPRINGFIELD, MASSACHUSETTS

C.M.P.: 1951 Version

The ponderous system of economic controls over construction materials finally gave tangible signs of shifting from scattered priorities to a firmer method of allocating the three basic metals — steel, copper and aluminum. The Defense Production Administration at long last announced its Controlled Materials Plan, less dramatic than the old War Production Board order, but for the most part welcomed by industry as a means of working some better method for materials distribution out of the chaotic condition arising from more and ever more DO rated priorities.

The plan finally announced early in April was a modification of the plan originally intended by National Production Authority officials. Rather than control of all the supplies of the critical metals, an "open-end" version was decided upon. This called for a strict control on only a portion of the supply with the balance left on the open-end basis for civilian goods use. The World War II plan, by contrast, rigidly controlled all use of the metals from the raw production to the end use stage.

The question of whether there would be a C. M. P. this time at all was touch-and-go for a time just prior to the announcement. Chief Mobilizer Charles E. Wilson stated publicly that his Office of Defense Mobilization was not sure that strict wartime controls over basic metals was necessary with the rearmament program only partially advanced. Those in NPA charged with administration of details of the program began to fret when officials of the higher defense agencies could not make up their minds. The target date for application of the new plan remained at July 1.

The pressures for institution of a C. M. P. had been building up in and out of government. The National School Boards Association, Inc., for example, took its complaints of scarce materials for schools directly to President Truman. Edward M. Tuttle, executive secretary of the group, wrote the White House urging that something be done at once to relieve the situation. His argument: when the civilian supply of materials and manpower shrinks by reason of large withdrawals for military requirements, public school authorities cannot compete with industry and business on an open market. He urged a "high priority for the needs of education when the C. M. P. becomes effective."

(*Continued on page 226*)

Light.....at work



"Pittsburgh" Permaflector

A PERMAFLECTOR PORTRAIT
The Levinson Steel Co.
Pittsburgh, Pa.
Elkan A. Avner, Architect
D. Levinson, Elec. Contr.

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is "standard equipment" in offices, public buildings, and plants throughout the country. Pittsburgh Permaflector Fluorescent and Incandescent Units, or a combination of both, are designed to create exactly the illuminating results required for high level working efficiency and visual and manual acuity.

Too, unusual and dramatic lighting designs are easily achieved when Pittsburgh Permaflector Equipment is installed. Our lighting engineers will gladly work with you on your individual problems.

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PITTSBURGH PERMAFLECTOR LIGHTING EQUIPMENT IS DISTRIBUTED BY BETTER ELECTRICAL WHOLESALERS EVERYWHERE

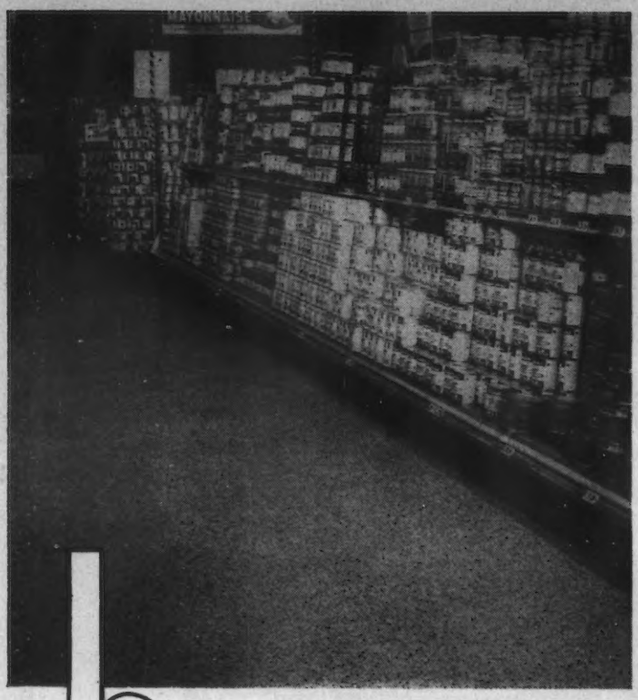


Photo shows Food Fair Market in Philadelphia. Architect: Louis Kasoff. Terrazzo contractor: United Marble Co. Both of Philadelphia.

Beautiful terrazzo

An aristocrat that works in supermarkets

Does a Terrazzo floor in a supermarket surprise you? It shouldn't, because not only is Terrazzo beautiful, but also its low annual cost prompts the choice.

The designer reasoned: heavy foot-traffic grinds the life and beauty out of most market floors. Terrazzo floors are known for long service life. They require virtually no maintenance and are easy to clean. What's more, Terrazzo stays beautiful throughout its long, long life. All this made "dollars and sense" to management . . . and also made Food Fair Market floors, such as the one above, an important part of their attractive interiors.

Terrazzo offers the architect a spectrum of color, unlimited design possibilities. Made with a true white cement, like Atlas White, any desired color and shading can be produced. In short, Terrazzo gives *practical* beauty for commercial-building floors or any other.

For more information see SWEET'S Catalog, Section 4g/Uni and 13f/Un, or write Atlas White Bureau, Universal Atlas Cement Company (United States Steel Corporation Subsidiary), 100 Park Avenue, New York 17, N. Y.

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THE RECORD REPORTS

WASHINGTON

(*Continued from page 224*)

FSA Gets Materials Office

The government pressures were exemplified by new activity within the Federal Security Agency touching directly on the school and hospital construction programs. Administrator Oscar R. Ewing set up a new Office of Materials Requirements under immediate direction of Rufus E. Miles Jr., who is assistant administrator for defense activities. This office will carry out details of claims for construction materials for schools and hospitals made to the NPA. (Veterans' hospitals are excluded from this function, coming under Veterans Administration jurisdiction.)

The Office of Education and the Public Health Service, constituents of FSA, are responsible for estimating and justifying materials requirements in their respective fields. For months these agencies have been gathering information to support their claims and preliminary reports have gone to the NPA.

The construction and supply needs of schools, colleges, universities and public libraries will be the responsibility of a staff serving under Ralph C. M. Flynt, director of special educational services. He is coordinating the program for the Office of Education.

The preliminary report to the controls agency was based on information obtained through thousands of questionnaires sent to state and local school bodies. This was supplemented by trade associations and other government agencies as well as by information from other sources. Estimates included copper, steel and aluminum requirements in scheduled building programs and in 278 specific items of supply and equipment.

Meanwhile, the Office of Education has been giving assistance to individual schools and colleges which have had their construction programs interrupted or impaired through shortages of critical materials. It was explained this assistance has been chiefly in expediting the contacts of schools and colleges with the appropriate section of the NPA which could grant emergency relief to them.

Claimant responsibilities for all health construction supplies and equipment

(*Continued on page 228*)

SPECIFY

NIBROC

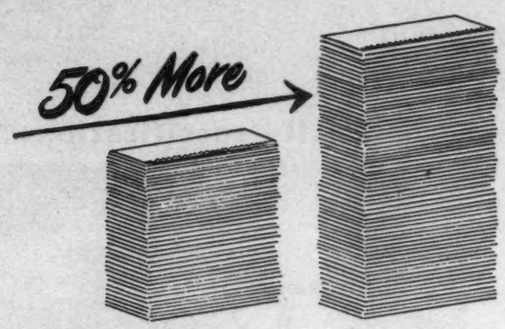
CABINETS

—World's Largest Selling Towel for Industrial and Institutional Use



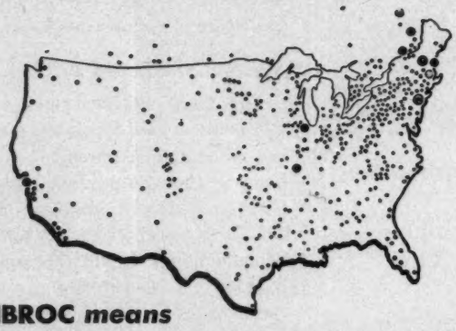
NIBROC *gives*

your clients wider choice of towels because Nibroc offers widest range—singlefold and multifold, white or buff—to meet every washroom requirement.



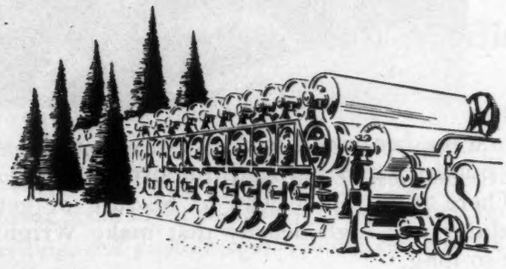
NIBROC *Cabinets*

hold up to 50% more towels than ordinary dispensers. No gadgets to fuss with. Reduce washroom congestion.



NIBROC *means*

a fast towel delivery service to your clients. Nationwide distribution and high mill production assure a steady stream of these towels *where* and *when* wanted in any desired quantity.



NIBROC *means*

a dependable supply of these quality towels year in and year out—made by one company from timber-cutting to finishing. One Brown Company machine, called "Mister Nibroc," can produce nearly 30 million towels daily.

BE SURE YOU SPECIFY NIBROC CABINETS FOR WASHROOMS. They fit into modern washroom planning. They dispense fresh, soft, absorbent, lint-free, economical and hygienic Nibroc towels for everyone.

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Why do more and more architects say "WRIGHT RUBBER TILE" instead of "rubber tile" when they write specifications?





. . . Why, because it is the *only* way to be sure of getting top quality material for all important floors.

There is no other way to be sure of getting the high modulus and high density that make Wright Rubber Tile last so long.

There is no other way to be sure of getting a naturally glossy, non-porous rubber tile that means easy cleaning and permanent new appearance.

There is no other way to be sure of getting the uniform color and marbleization that means a truly beautiful installation.

To be sure of getting the best installation, as well as the finest rubber tile, more and more architects are using the suggested installation specifications found in the Wright Section of Sweet's Architectural File. They are the result of thirty years' experience.

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FLOORS OF DISTINCTION

- **WRIGHTEX — Soft Rubber Tile**
- **WRIGHTFLOR — Hard Surface Rubber Tile**
- **WRIGHT-ON-TOP Compression Cove Base**

THE RECORD REPORTS

WASHINGTON

(*Continued from page 226*)

fall to the Public Health Service. This now has its own Division of Civilian Health Requirements to carry out the claimant functions connected with construction of hospitals and health centers. Charles G. Lavin is coordinating this program.

Just as did the Office of Education, the Public Health Service has submitted to the controls officials an itemized report of civilian health needs. The federal security administrator said PHS had been rendering substantial assistance to hospitals and health departments which are handicapped in their operations or construction programs due to delays caused by material shortages. In addition, it has provided NPA with information to assist that agency in determining the level of production necessary to meet essential needs for health supplies and equipment.

School Need: $14 Billion

A recently published report out of the Office of Education points up once again the estimated requirements for school housing. Called a progress report by the Citizens Federal Committee on Education, it is titled "Citizens Look at our Schoolhouses." In the 20 pages of this booklet is a brief review of reasons for the acute shortage of space, both currently and in prospect. In short, it attempts to answer the question, "How did we get this way?" In summary, the drag in the school building programs during the depression years and during World War II times, coupled with increasing birth rates since 1941, have combined to bring the national school system to its present plight.

What about the future? The report states that 40,000 additional classrooms and other facilities for 1.2 million new enrollees in kindergarten and 13th and 14th grades will have to be provided. The reorganization of school districts would require 60,000 more.

Thus it arrives at a grand total of new classrooms needed by 1959–1960 of 520,000, broken down as follows:

For increased enrollments in grades 1 to 12 — 270,000.

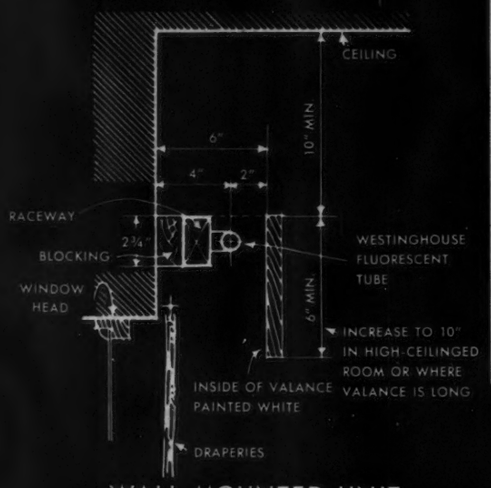
For necessary replacements — 150,000.

(*Continued on page 230*)

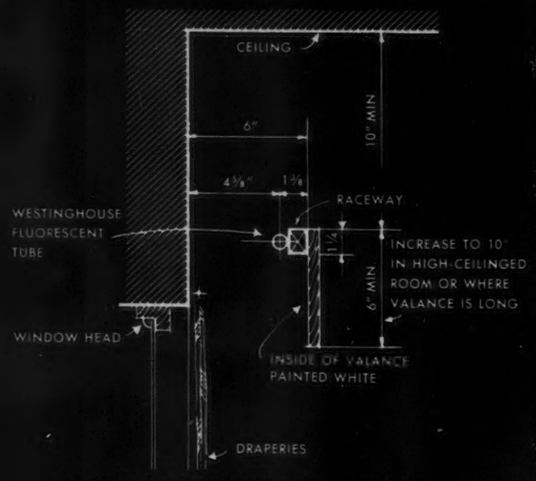
DESIGN DETAILS

PLATE 2

VALANCE LIGHTING



WALL MOUNTED UNIT



VALANCE MOUNTED UNIT

YOU CAN BE **SURE**.. IF IT'S

Westinghouse



This 24-page book fills a real need for construction details on valance, cornice, cove, soffit, pinhole, under-cabinet and other unusual lighting effects. Kitchen and laundry plans, with complete dimensions, are also shown. Send for your Free copy.



Built-In Lighting . . . an Effective Design Medium

Even well-designed interiors can be given added character when modern lighting techniques are used. For example, see what valance lighting does for the living room illustrated above. Cove, cornice, recessed ceiling, and pinhole spot lighting can also be used.

These types of built-in lighting are equally effective in dining rooms, bedrooms and dens . . . and for that matter, in stores, shops, and offices, too.

In a booklet prepared by the Better Homes Bureau you will find "Design Details" of modern home lighting techniques, as well as suggestions for planning kitchens, laundries and wiring. Why not ask for a copy of "Design Details for Electrical Living Homes" . . . no charge. G-10134-A

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P. O. Box 868, Pittsburgh 30, Pa.

Please send me a FREE copy of your book—"Design Details for Electrical Living Homes"—B-4671.

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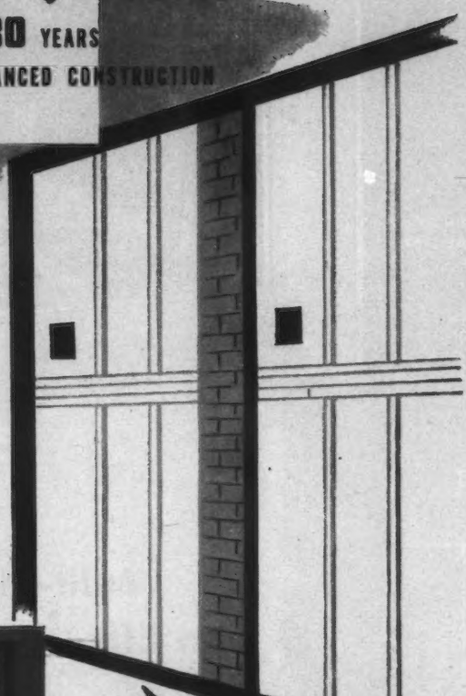
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Security

FREIGHT ELEVATOR DOORS

FOR OVER 30 YEARS

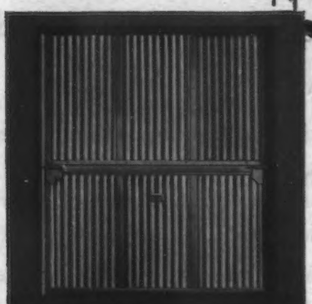
PIONEERS IN ADVANCED CONSTRUCTION



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1. To receive underwriters' approval of Electric Interlocking Equipment.
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which, combined with long experience and constant field checking and servicing have kept Security as leaders in meeting constantly changing industrial needs.



YEARS AGO—ALL STEEL

now obsolete and frequently replaced by Security Metal Clad Doors.

1951 METAL CLAD!

The proven construction for maximum life and endurance to withstand rough usage and abuse of modern power trucking.



1951 UNDERWRITERS LABELED DOORS

provide *minimum* standards for hatchway entrance protection.

Security's Underwriters labeled doors are specifically designed for the *maximum* requirements of each individual job so that they will give the better and *lasting* protection that owners seek.

1951 REINFORCED TRUCKING BARS

Modern Security Doors are known for the reinforced construction of their trucking bars.

Individually engineered for each installation, these heavy duty trucking bars adequately handle the job indefinitely.

THIS ASSURES CONTINUED

Lowest fire insurance rates
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Security FIRE DOOR CO.

3046 LAMBDIN AVE. • ST. LOUIS 15, MO.

THE RECORD REPORTS

WASHINGTON

(*Continued from page 228*)

For reorganized school districts — 60,000.

For kindergartens and grades 13 and 14 — 40,000.

This spells out a need for 50 per cent more classrooms over the next 10 years than are in the present inventory.

What will filling these requirements cost? Better than $14 billion, says the report. It defines cost this way:

Estimated basic cost per classroom including related facilities, $27,000 in 1950 prices. This means:

270,000 rooms for grades 1 to 12 would cost $7290 million.

150,000 rooms for replacements would cost $4050 million.

100,000 rooms for other needs, $2700 million.

The total: $14,040 million.

What of classroom design? Classrooms should not be all the same, the citizens committee observes. They should be designed with special reference to the age groups and subjects taught — art, physical education, natural science.

The report advises that architects designing schools give special attention to modern scientific methods for lighting, heating and ventilation, laboratories, shop work, auditoriums, gymnasiums, recreational facilities, cafeterias, libraries, special services and vocational education.

One excerpt from the report: "The architect selected should be thoroughly briefed on all points determined upon so that his blueprints will be something more than just a 'standard design.' Decisions about financing should be made only after all aspects of the subject have been explored thoroughly. Failure to appropriate sufficient funds may force the community to forego important advantages and real economies."

The report also deals with site selection, size of school houses and legislative actions.

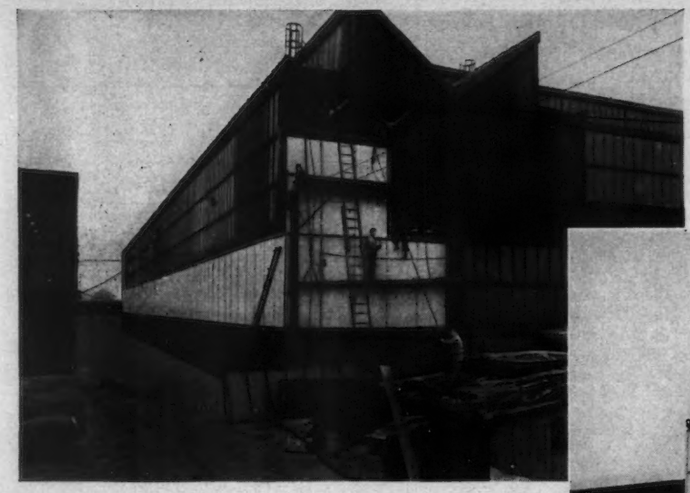
The needs outlined are considered "feasible under present conditions" by the committee. The long-range school building needs cannot be indefinitely postponed, they insist.

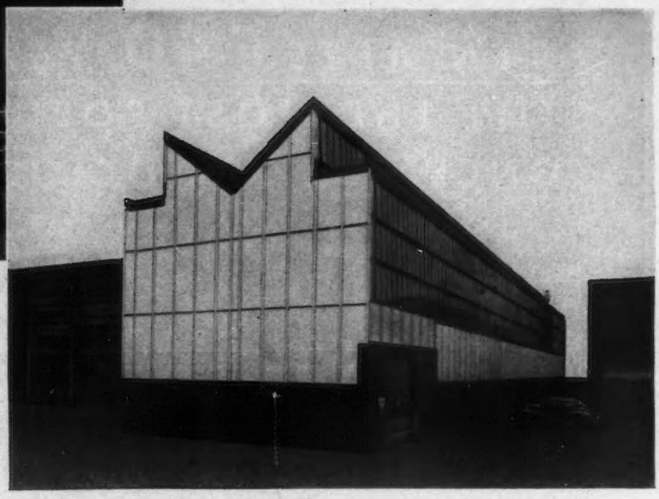
What would be the effect on availability of materials for school building was still a question.

(*Continued on page 232*)

Cemesto* curtain walls need no exterior or interior painting

Cemesto combines amazing structural strength, high insulation value, exterior and interior finish—all in a single handy panel that's quick and easy to apply!





Babcock Press of Canton, Ohio, replaces metal siding with durable Cemesto Panels

Contractor: A. G. Stafford Co., Canton, Ohio

Above: View of workmen replacing printing plant's worn-out corrugated steel siding with Cemesto Insulating Structural Panels.

Right: Same building—now with permanent, weathertight, maintenance-free walls of Cemesto Panels.

Now, build *insulated* curtain walls for only slightly more than the cost of ordinary *un*insulated construction! Cemesto Insulating Structural Panels quickly, thriftily build *permanent* curtain walls that require no exterior or interior finish . . . *can't* corrode . . . *never* need maintenance!

Widely used for ROOF DECKS and PARTITION WALLS, as well as CURTAIN WALLS—Cemesto Panels offer many advantages and economies. They not only speed up work and cut costs in construction of all kinds—but they also *insulate as they build!*

Cemesto Panels Offer Many Unique Advantages. Cemesto Panels consist of a core of Celotex cane fibre insulation, to which a *non-combustible* cement-asbestos facing is bonded on both sides by a vapor-resistant, moistureproof adhesive.

These rigid, pre-formed units are light and easy to handle, yet have remarkable structural strength. Their smooth, hard, stone-gray surfaces have a light reflection value of 58% . . . provide attractive exterior and interior finish . . . no costly painting required! And their insulating core is protected by the exclusive (patented) Ferox® Process against fungus, dry rot, vermin and termites!

Cemesto Panels Insulate As They Build. Because of their high *built-in* insulation value, Cemesto Panels make any building cooler, more economical to air-condition in summer . . . warmer and thriftier to heat in winter. They make possible more comfortable, healthier working conditions. And this pays off in improved employee efficiency . . . reduced accidents . . . increased production!

Cemesto Panels are Amazingly Versatile. Cemesto Panels resist fire, weather and wear. Can be worked with ordinary tools on the job, or pre-cut at the mill for faster application. Quickly, easily attached to steel framing with metal clips, or to wood framing or wood members with nails. And they are easily demountable, *fully salvageable.*

Cemesto Insulating Structural Panels make possible important economies in the design, construction and maintenance of every type building . . . from giant industrial plants to modest homes. Almost 20 years of varied use in all climates, all over the world, have proved their stability, permanence and performance. Discover how they can help *you* build better, faster . . . *and at lower cost.* Mail coupon below for complete information!

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Chicago 3, Illinois

Please send me FREE your 40-page Manual giving full technical data on Cemesto Panels, plus latest design and application recommendations. I am particularly interested in
☐ Curtain Walls ☐ Partition Walls ☐ Roof Decks.

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THE RECORD REPORTS

WASHINGTON (*Cont. from p. 230*)

Shorts

• Economy in government was being preached in the usual quarters as the fiscal 1952 budgets went under the close eyes of the appropriations committees of Congress. The National Chamber of Commerce called for large cuts in unnecessary non-defense outlays, the National Association of Manufacturers came up with its new tax plan, and the Committee for Economic Development unfurled an entirely new emergency tax program founded on a $6 billion reduction in the federal budget. The pay-as-we-go policy was being talked with new fervor both in and out of government.

• The Lustron prefabricated housing plant controversy appeared to be settled — finally. President Truman upheld the decision of Gen. William H. Harrison, defense production administrator, to turn the Columbus, Ohio, facilities over to the Navy to be used in assembling aircraft made by North American. Formal transfer of the defunct corporation plant finally was effected formally, with the Navy agreeing not to disturb the expensive machinery and equipment in the Lustron plant until notified to do so.

EVEN AFTER 40 YEARS
STILL THE MOST POPULAR
CONCEALED DOOR CLOSERS

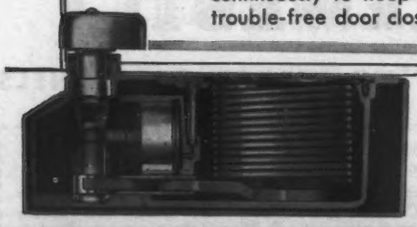
RIXSON

SINGLE ACTING—OFFSET TYPE
CHECKING FLOOR HINGES
No. 18 • No. 20 • No. 25

The original purpose in designing this offset type, was to furnish a ruggedly built CONCEALED CLOSER . . . that would carry the full weight of heavy doors and control the full 180° opening and closing action . . . withstand years of hard usage in public entrances and require a minimum of adjustment and repair.

The fact that they have been the most popular of all concealed closers for over forty years is evidence that they have faithfully carried out their designer's purpose.

Through the years, there have been many improvements . . . and laboratory tests are being made continuously to keep these the most efficient and trouble-free door closers.



ALWAYS SPECIFY
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THE OSCAR C. RIXSON COMPANY
50 Years of Improved Mechanisms in Builders Hardware
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ON THE CALENDAR

Current through May 25: Gold Medal Mural Painting Exhibition — The Architectural League, 115 E. 40th St., New York City.

Current through June 3: Exhibition of prize-winning designs from Lamp Competition — Museum of Modern Art, 11 W. 53rd St., New York City.

Current throughout 1951: 1951 Good Design, second in the series of well-designed home furnishings exhibitions, sponsored by the Museum of Modern Art and the Merchandise Mart — The Merchandise Mart, Chicago.

May 1–4: American Institute of Decorators Trade Exhibition, in conjunction with 20th anniversary conference — Grand Rapids Civic Auditorium, Grand Rapids, Mich.

May 2–4: Northeastern District Meeting, American Institute of Electrical Engineers — Syracuse, N. Y.

May 3–5: Round table clinic on rental housing, sponsored by the National Association of Home Builders — Memphis, Tenn.

May 3–Sept. 30: Festival of Britain, including architectural exposition on main exposition grounds, south bank of Thames, London — London and throughout British Isles.

May 7–8: Conference of civil defense leaders from throughout the nation, called by Federal Civil Defense Administrator Millard Caldwell — Washington, D. C.

May 7–8: Spring Meeting, The Producers' Council, Inc. — Edgewater Beach Hotel, Chicago.

May 7–11: Annual Meeting and International Industry Show, Forest Products Research Society — Convention Hall, Philadelphia.

May 8–11: 83rd Annual Convention, the American Institute of Architects — Edgewater Beach Hotel, Chicago.

(*Continued on page 234*)



Floors that add to the architectural beauty of interiors can be achieved on a limited budget with Armstrong's Asphalt Tile. Regular colors are now augmented by "Designer's Palette" Series E colors with muted tone-on-tone marbleizing. In either style, Armstrong's Asphalt Tile offers outstanding beauty at low cost.

Employees' Lounge
John Hancock Building, Boston, Mass.
Crum & Ferguson, Architects

ARMSTRONG'S ASPHALT TILE

ARMSTRONG CORK COMPANY • LANCASTER, PENNSYLVANIA

37 FALLING ACCIDENTS EVERY HOUR*



WILL ONE OF YOUR MEN BE NEXT?

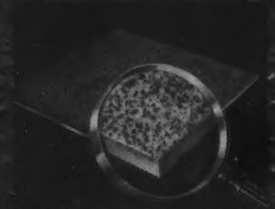
Every hour, falling accidents kill or disable 37 workmen!*

Are you sure your men are safe from unsafe footing?

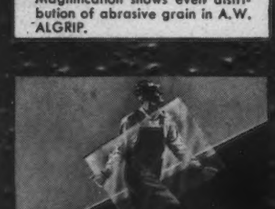
You can give your workmen maximum protection against costly slipping and falling accidents with A. W. ALGRIP Abrasive Rolled Steel Floor Plate. ALGRIP is made by rolling tough abrasive grain as an integral part of the upper portion of steel floor plate. Wet or dry ALGRIP gives non-slip protection even on steep inclines. Wear only exposes new abrasive particles so maintenance is not required.

Engineers, architects, purchasing agents, and safety engineers are specifying A. W. ALGRIP for thousands of industrial and commercial applications. Follow their lead. Get more information now. Write for booklet B-20.

THERE'S NEVER A SLIP ON A.W. ALGRIP!



Magnification shows even distribution of abrasive grain in A.W. ALGRIP.



Even on steep inclines A.W. ALGRIP IS NON-SLIP!

A.W. ALGRIP ABRASIVE ROLLED STEEL FLOOR PLATE

ALAN WOOD STEEL COMPANY

CONSHOHOCKEN, PA.

125 Years of Iron and Steel Making Experience



Gentlemen:
Please send me your 8-page information-packed booklet B-20.

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COMPANY_____

ADDRESS_____

CITY_____ ZONE_____ STATE_____

Other Products: PERMACLAD Stainless Clad Steel • A.W. SUPER-DIAMOND Floor Plate Plates • Sheets • Strip • (Alloy and Special Grades)

17% of the 222 occupational injuries which occur every hour are due to falls. Source: National Safety Council's 1949 edition of Accident Facts.

THE RECORD REPORTS

(*Continued from page 232*)

May 11: Symposium on architectural acoustics sponsored jointly by Acoustical Society of America and the American Institute of Architects — Washington, D. C.

May 17–19: Great Lakes District Meeting, American Institute of Electrical Engineers — Madison, Wis.

May 20–24: Annual Convention, National Association of Building Owners and Managers — Rice Hotel, Houston, Tex.

May 20–June 24: Architects' Spring Trek to Europe; Harold R. Sleeper, F.A.I.A., leader.

May 28–June 8: 1951 Canadian International Trade Fair — Exhibition Grounds, Toronto, Ont.

May 30–June 2: British Architects Conference — Belfast, Ireland.

May 30–Sept. 9: World Transportation Fair — Santa Anita Park, Calif.

June 18–22: Annual Meeting, American Society for Testing Materials — Chalfonte-Haddon Hall, Atlantic City.

June 21–23: Second Annual Convention, New Jersey Chapter, American Institute of Architects, and New Jersey Society of Architects — Berkeley-Carteret Hotel, Asbury Park, N. J.

June 25–29: Summer General Meeting, American Institute of Electrical Engineers — Royal York Hotel, Toronto, Ont.

July 1–Sept. 1: Fountainebleau School of Fine Arts and Music. Details available from: Fountainebleau Association, 122 E. 58th St., New York City.

July 4–Sept. 3: Small exhibition of color reproductions of Frank Lloyd Wright's Johnson Wax Company buildings at Racine, Wis. — Museum of Modern Art, 11 W. 53rd St., New York City.

July 21–Aug. 4: Oxford Summer School on Architectural History and Measured Drawing, held in connection with the Festival of Britain. Details available from: J. Brosgall, Shire Hall, Reading, England.

OFFICE NOTES

Offices Opened

• Ralph J. Bishop, A.I.A., has opened his new office in his own combination

(*Continued on page 238*)

ENGINEERS! ARCHITECTS!

HERE'S A BIG HELPING HAND FROM SYLVANIA



Complete new Lighting Layout Kit

yours for only $1.00

Don't miss this offer! Here in one convenient kit are the tools and information you need for making complete, accurate lighting layouts.

Save time. Save trouble. Win quicker client approvals. Don't delay. Pin a dollar to the coupon and *mail today!*



See what you get!

1. **Lighting Estimator Slide Rule** . . . a handy pocket calculator, complete with instructions for estimating accurately the proper number of fixtures for a pre-determined level of illumination.

2. **Lighting Layout Specification Sheets** . . . they offer a neat, business-like method of submitting detailed estimates. Enable you to make up a complete, easy-to-read lighting plan.

3. **Lighting Layout Plastic Template** . . . to speed up the plotting of lighting layouts. Provided with 2 scales . . . ⅛" and ¼" . . . with convenient slots for 2-ft., 4-ft., and 8-ft. fixture lengths.

. . . And in addition

4. **Sylvania "All Line" Folders** . . . they briefly describe the entire Sylvania Fluorescent Fixture line. Leave these folders with your prospects. They call attention to other fixtures . . . help build additional sales.

5. **Ordering Guide and Price Schedule** . . . completely illustrated. Give prices of fixtures and all necessary accessories such as continuous-row joining equipment in rows up to sixty feet. They make ordering easy.

6. **Sylvania Fixture Catalog** . . . includes photos and gives detailed lighting data about each fixture. Also includes handy estimator for on-the-spot figuring.

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New York 19, N. Y.

Enclosed is $1.00, please send me Sylvania's new Lighting Layout Kit for Architects.

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*Company*_____

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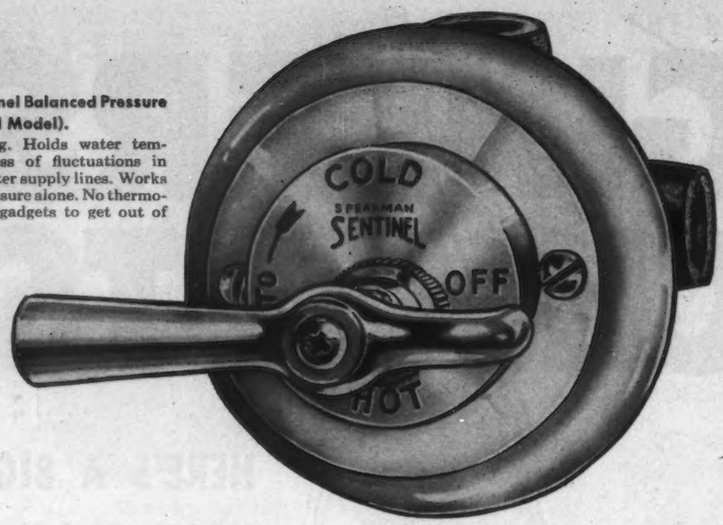
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THE BEST IN BRASS

S-1735 SPEAKMAN Sentinel Balanced Pressure Mixing Valve (Concealed Model).
A triumph of engineering. Holds water temperatures steady regardless of fluctuations in pressures in hot or cold water supply lines. Works automatically on water pressure alone. No thermostats, rockers, springs or gadgets to get out of order.



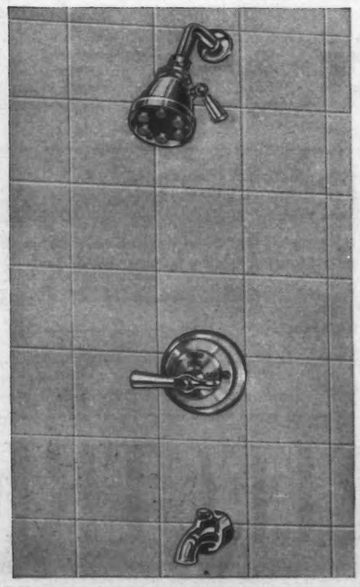
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in showers . . . is this combination . . .

New **Bathing Comfort!**

New **Water-Saving Economy!**

New **Low Maintenance!**



2 OTHER POPULAR SPEAKMAN PRODUCTS

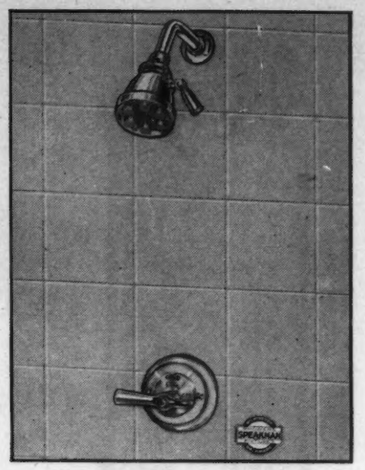
Built-in Sentinel Shower with Switch-Bak Nozzle (S-1775)
Size, ½ inch. Metal lever handle, wall flange and dial plate. Anystream Shower Head with integral ball joint and concealed volume control, bent arm and wall flange.



Si-Flo Quiet Operating Flush Valve (K-9000 BSP)
The flush valve that whispers—never SHOUTS. Easiest to install—easiest to maintain. All wearing parts contained in single piston unit which may be removed and replaced in 5 minutes or less. Self-cleaning by-pass. Adjustable connection (3/8" + or −) between valve and stop makes installation easy and compensates for slight variations in regular roughing-in of 4¾". A type for every use in apartments, hotels, schools, theatres and homes.

S-2250 Model 1 SPEAKMAN Anystream Self-Cleaning Shower Head.
America's most famous aid to better shower bathing. A turn of the lever allows the bather to select exactly the kind of spray he wants—needle for stimulation, regular for relaxation, flood for no-splash rinse. Always delivers full pattern shower.





S-1700 Complete SPEAKMAN Built-In Sentinel Shower.
Pipe size ½ inch. Combines the Sentinel Balanced Pressure Mixing Valve and the Anystream Shower Head to provide America's outstanding, modern shower bath. Other concealed and exposed models available for every type of installation.

SENTINEL-ANYSTREAM

The Shower that has no equal . . .

Together—or used independently—the Sentinel Balanced Pressure Mixing Valve and the Anystream Self-Cleaning Shower Head offer exclusive features not to be found in any other shower. Here are the exclusive features that make Speakman Sentinel-Anystream Showers outstanding:

THE ANYSTREAM SHOWER HEAD—

1. Anystream Shower Heads take care of more bathers per gallon of water. Users report water savings up to 50%. This is an important feature during periods of peak demand on hot water. Provides full-pattern shower even on low water pressure.
2. Type of spray—From stimulating, stinging needle spray, or relaxing, smooth normal spray, to non-splash flood spray for rinsing, the Anystream delivers what the user wants. A turn of the lever sets the spray as desired. And, when turned off, there's no annoying after-drip.
3. *Self-Cleaning—won't clog.* In flood position all dirt and sediment is immediately flushed out. Precision-built for long wear. Integral ball joint with concealed volume control (Model 1). Heads for use in public places may be supplied with Allen set screw to discourage malicious removal.

THE SPEAKMAN SENTINEL BALANCED PRESSURE MIXING VALVE

Here's the answer to the problem of what to do about fluctuating water pressure that causes sudden surges of steaming hot or icy cold water in the shower bath. With the Sentinel, the bather sets the temperature where he wants it—and the Speakman Sentinel Mixing Valve *holds* it there. Here are the outstanding features of this valve.

1. Holds discharge temperatures even.
2. Operation not affected by pressure variations in supply lines.
3. All wearing parts renewable from face of valve.
4. No thermostats, rockers or springs to get out of order—a simple f-l-o-a-t-i-n-g piston does the work. Minimum maintenance.



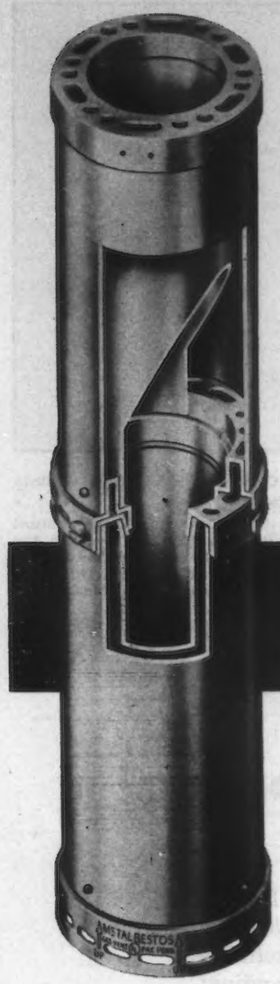
See SWEET'S Architectural File for condensed catalog, or write for complete information on these products.

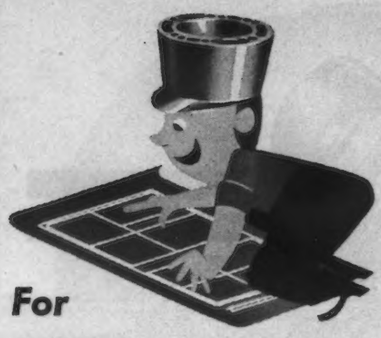
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DURABLE, SAFE VENTING
specify

QC METALBESTOS
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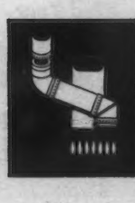
Lasting Construction
Permanent protection against the corrosive action of flue gases, condensates and the weather is provided by QC Metalbestos. Deterioration due to corrosion and cracking is eliminated when you specify this sturdy, all-aluminum, double wall gas vent pipe.

Dependable Operation
Metalbestos' unique double wall construction and leak-proof joints give complete protection against fumes or fire hazards. The aluminum inner pipe heats up quickly for efficient venting while the built-in air space minimizes heat loss and insulates the outer pipe against excessive heat. Precision formed QC Couplers and adjustable fittings permit rapid assembly and assure trouble-free, efficient venting.

Independent laboratory tests prove that Metalbestos keeps surrounding walls cooler than any other Type B gas vent listed by Underwriters' Laboratories, Inc.



New Venting Manual Now Available!
Published in the interests of better venting, this booklet, "Venting of Gas Appliances", contains basic rules and other helpful data concerning correct venting practices. For your free copy, just write to Dept.



METALBESTOS DIVISION
WILLIAM WALLACE COMPANY · BELMONT, CALIF.

THE RECORD REPORTS

(*Continued from page 234*)

residence and studio at 1526 W. Riverside Avenue, Spokane 8, Wash.

• Roland L. Robel, Architect, has established an office for the practice of architecture at 309 Western Surety Bldg., Sioux Falls, S. D.

• Slater and Chait, Architects, announce the opening of additional offices for the practice of architecture at 15 Park Avenue, New York 16, N. Y., and 171 E. 33rd St., New York 16, N. Y.

New Firms, Firm Changes

• The partnership of Benedict M. Ade and Conway L. Todd of Rochester, N. Y., has been dissolved. Both architects will establish offices of their own.

• F. Arthur Bickel, M.E., has become president and treasurer of Brown & Matthews, Inc., Engineers-Constructors, of New York City, following the recent death of Harry G. Matthews, president. P. Schuyler Bloem, P.E., has been named executive vice president in charge of engineering and sales.

• Erling G. Dollar and William F. Bonner Jr. announce the formation of a partnership for the practice of general architecture under the firm name of Dollar and Bonner, Architects, with offices at 1009 Washington St., Wilmington, Del.

• Appointment of Bradford N. Clark as an associate in the firm of Eggers and Higgins, Architects, has been announced by Daniel Paul Higgins and Otto R. Eggers, senior partners of the firm, with offices at 100 E. 42nd St., New York City. Mr. Clark will be responsible for construction and production as well as a newly formed industrial division.

• William E. Graham has announced the dissolution of the firm of Graham and Irwin, Architects, 2014 17th Ave., Vero Beach, Fla. Mr. Graham will continue to practice at that address.

• Lockwood Greene Engineers, Inc., Architects and Engineers, have recently added three new members to the Board of Directors. They are John R. Potter

(*Continued on page 240*)

Construction with Permalite lightweight aggregates

requires less steel...

saves time and manpower

Permalite lightweight aggregates can cut dead-load by as much as 80%!

● Today critical steel shortages create an urgent need for lightweight building design. Now, dead-load to live-load ratio can be reduced from 7 to 1 to less than 2 to 1. Much of this saving can be in structural steel. How? By using Permalite aggregates in floors, walls and roof.

Furthermore, concrete and plaster made with Permalite instead of sand are easy to handle—*quick to apply*. Rigid completion dates can be set and met!

Permalite aggregate in concrete is an efficient lightweight, insulating floor and roof fill material. In plaster it permits the fireproofing of structural steel without costly imbedding in heavy concrete. On walls and ceilings it assures lighter, more resilient base coats.

Get the full story on why architects are specifying Permalite for *all types of construction*—industrial buildings, schools, hospitals, defense housing and military buildings.

TYPICAL USES:

Concrete Aggregate: *Roofs and Floors* — over lightweight decking. *Exterior Walls* — thin, light; easily formed and erected. Can be monolithically poured or precast into blocks, slabs and panels — can be sawed or nailed!

Plaster Aggregate: *Fireproofing* — speedily applied over structural steel. *Interior Walls* — replaces sand in plaster — at less than half the weight.



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THE LEADING PERLITE AGGREGATE

A Building Product of Great Lakes Carbon Corporation and its exclusive Permalite Licensees

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☐ Please send full information on Permalite lightweight construction. ☐ Please have representative call.

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ADDRESS_____

CITY_____ STATE_____

(*Continued from page 238*)

and H. Morgan Rogers, both electrical engineers, and Harry E. Martin, mechanical engineer.

• Daniel D. Merrill and Charles A. Bradbury announce the formation of a partnership to practice architecture under the name of Merrill & Bradbury, 225 W. 57th St., New York 19, N. Y.

• F. L. Cochran, A.I.A., has been named a partner in Perkins & Will, architects-engineers, Chicago and White Plains, N. Y. Other partners are Lawrence B. Perkins, A.I.A., Philip Will Jr., A.I.A., John E. Starrett, M.E., and John C. Goodall. The firm name remains Perkins & Will. Before joining Perkins & Will in 1945, Mr. Cochran was technical director of the Chicago Housing Authority. Earlier he was associated with Shaw, Naess & Murphy, Chicago; Arthur Bohmen, Chicago; and Alden Dow, Midland, Mich. The branch office at 171 E. Post Road in White Plains has been opened recently by Perkins & Will to maintain closer supervision of work in the East.

• M. De Witt Grow, Architect, has joined the firm of Peterson & Hoffman, which will be known as Peterson, Hoffman & Grow. Offices are at 520 Spitzer Bldg., Toledo 4, Ohio.

• A. Wilson Knecht, mechanical engineer, has been admitted to the firm of Seelye, Stevenson & Value, civil, industrial and structural engineers, with offices at 101 Park Ave., New York 17, N. Y. The firm will be known as Seelye, Stevenson, Value & Knecht, consulting engineers. For the past four years Mr. Knecht has been chief mechanical engineer and assistant chief engineer for Walter Kidde Constructors Inc. Earlier, he had been for many years an associate of the late Clyde R. Place, consulting engineer.

New Addresses

The following new addresses have been announced:

Bruno Amato, Architect, 216 Westchester Ave., Port Chester, N. Y.

John O. Barkwell, Barkwell Building Co., Architects-Engineers-Builders, 1318 Woodcliffe Drive, S.E., Grand Rapids, Mich.

C. D. Davison and Company, Architects, 95 Dresden Row, Halifax, Nova Scotia.

Dawson, Oliver & Murtagh, Architects, 575 Madison Ave., New York 22, N. Y.

Pierre Ghent & Associates, Land Planning and Housing Consultants, 1836 Jefferson Place N.W., Washington, D. C.

Kilham, Hopkins, Greeley and Brodie, Architects, 9 Arlington St., Boston 16, Mass.

Macklin & Stinson, Architects and Engineers, 639-A W. 5th St., Winston-Salem, N. C.

Meyer & Ever, Architects, 149 California St., San Francisco 11, Calif.

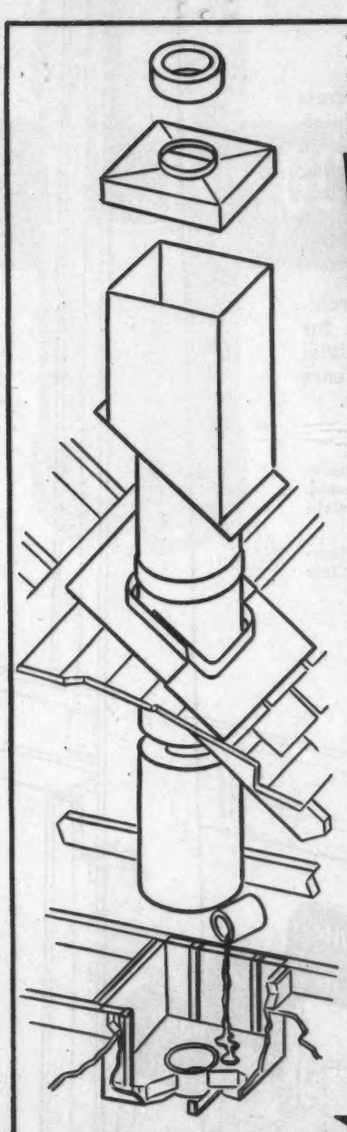
Francis Palms Associates, Architects and Engineers, 925 20th St., N.W., Washington, D. C.

Martin Shapiro, Architect, 129 Railroad Ave., Jersey City 2, N. J.

Daniel Denison Streeter, Architect, 214 Fenimore St., Brooklyn 25, N. Y.

Walter Thomas Williams, Architect, Rochester Hill Rd., Rochester, N. H.

(*Continued on page 242*)



GAIN AN EXTRA

4 Sq. Feet

In Your Next Floor Plan

and cut costs too—

There's room for that extra closet when you include Van-Packer Complete Masonry Chimney in the floor plan. Savings of 4 sq. feet and more are made possible because of the new accepted and proved Van-Packer design. In a two story house 8 sq. feet are saved.

AREA COMPARISON VAN-PACKER CHIMNEY AND BRICK CHIMNEY OF EQUAL EFFICIENCY

The Van-Packer has a tested insulating value of 24" of brick or 70" of concrete and is round for maximum efficiency and economy of space. Actual measurement shows the Van-Packer to occupy 163 square inches as compared to a 768 square inch brick chimney that approaches Van-Packer efficiency.

Specify a Van-Packer Chimney when heat loss does not exceed following specifications.

	Floor Suspended		Ceiling Suspended	
Coal	250,000	B.T.U. PER HOUR	150,000	B.T.U. PER HOUR
Oil	300,000		200,000	
Gas	500,000		450,000	

Write today for valuable architects' specification sheets showing complete performance, operation and installation data. New Underwriters' Report also available.

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Also manufactured and distributed in Canada by C. A. McRobert and Son, Ltd., St. Laurent, Quebec.



How to ZIP-UP a building!

Build it by *areas* instead of by *inches!* Use steel or aluminum Fenestra* "C" Panels! Just zip up your walls by interlocking these strong, simple sandwiches of metal and glass fibre insulation. You save time, labor, materials, money . . . your building is enclosed *fast* . . . and starts making money right away.

What's more, you can zip these walls apart and set 'em back up again farther out if you ever want to *expand* your building.

"C" Panels are light weight but tremendously strong and rigid. Only 3" thick . . . but with insulation value equal to that of a 12"-thick brick wall.† Incombustible. So smooth that dirt and grease can't get a grip.

They're another Standardized Fenestra Product engineered to cut the waste out of building (and maintenance).

And you can get *quick* delivery!

A Few Details on Fenestra "C" Panels

Size: Standardized 3" deep, 16" wide, 6' to 12' long, 18 gage painted steel or 16 B&W gage aluminum (or combination). Steel panels weigh only 6.50 lbs. per sq. ft. Aluminum 3 lbs.

Elements: Made from two formed members joined into a structural, vapor-sealed unit. Asphaltic impregnated felt is inserted inside full length between members and end closures to prevent metal-to-metal contact. Packed with glass fibre insulation. Double tongue and groove joints give three positive bearing surfaces per panel, making wall of vertical "C" Panels an integral unit.

For full information on specifications, performance data, installation details, delivery schedules, etc., call your Fenestra Representative today (he's listed in your phone book) or mail the coupon.

*Trademark

†This difference in thickness will give you 602 sq. ft. more floor space in a 150' x 250' plant!

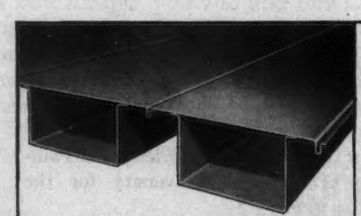


"C" *Panel Walls* of The Kansas Power and Light Company, Hutchinson. Both steel and aluminum and "combination" panels were used. *Architect:* Black & Veatch, Kansas City.

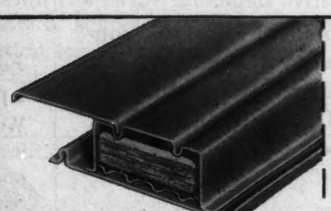
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PANELS · DOOR S · WINDOWS

Engineered to cut the waste out of building



"D" Panels for smooth strong floors and long-span roofs. Standard width 16". Depth 1½" to 7½". Gages 18 to 12.



Acoustical "AD" Panels for combination ceiling, silencer, roof. Standard width 16". Depth 3" to 7½". Gages 16 to 13.

DETROIT STEEL PRODUCTS COMPANY
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Dept. AR-5, 2252 E. Grand Boulevard
Detroit 11, Michigan

Please send me, without obligation, information on Fenestra Building Panels.

Name_____

Company_____

Address_____

(*Continued from page 240*)

AT THE COLLEGES

Thomas W. Mackesey Appointed Architecture Dean at Cornell

Prof. Thomas W. Mackesey has been appointed dean of the College of Architecture at Cornell University.

Professor Mackesey, who joined the Cornell faculty in 1938, has been acting dean since the resignation of Prof. Gilmore D. Clarke last summer.

The new dean helped plan the Sampson Naval Training Station, used for training recruits during World War II. He has also aided in replanning studies for downtown Brooklyn and in studies of traffic problems in New York City.

Professor Mackesey graduated from Massachusetts Institute of Technology in 1932. He received a master's degree in city planning at M.I.T. in 1938 and did further graduate work at Cornell and Harvard.

Leicester B. Holland Head Of Architecture at Miami

Dr. Leicester B. Holland, F.A.I.A., has been named head of the department of architecture in the School of Fine Arts of Miami University at Oxford, Ohio. Dr. Holland has been professor of architecture since 1948 under the late William Dunbar as head of the department.

Robert W. Modaff, now assistant professor of architecture, will serve Dr. Holland as executive assistant.

Before his recent death, Mr. Dunbar secured the services of two European critics as design critics for the department: Rudolph Frankel, a British subject specializing in theater, factory and civic design; and William de Moor, who was born in Italy, studied in Paris and has been practicing in Sweden.

Pennsylvania Inaugurates Two Programs in Planning

The School of Fine Arts of the University of Pennsylvania will initiate two programs of studies leading to degrees in city planning beginning this fall.

The undergraduate course of studies will be a five-year program leading to the degree of bachelor of city planning, while the graduate program will qualify successful candidates for the degree of master of city planning.

The new curricula will be under the supervision of G. Holmes Perkins, dean of the School of Fine Arts at Pennsylvania and former Charles Dyer Norton professor of regional planning and chairman of the department of regional planning of the Harvard University Graduate School of Design. Mr. Perkins is also editor of the *Journal* of the American Institute of Planners.

Faculty Appointments

• Reginald R. Isaacs and Coleman Woodbury were appointed visiting critics in the Department of Regional Planning of Harvard University for the Spring term.

Mr. Isaacs, who is director of the planning staff of the Michael Reese Hospital in Chicago, is conducting a col-

(*Continued on page 244*)



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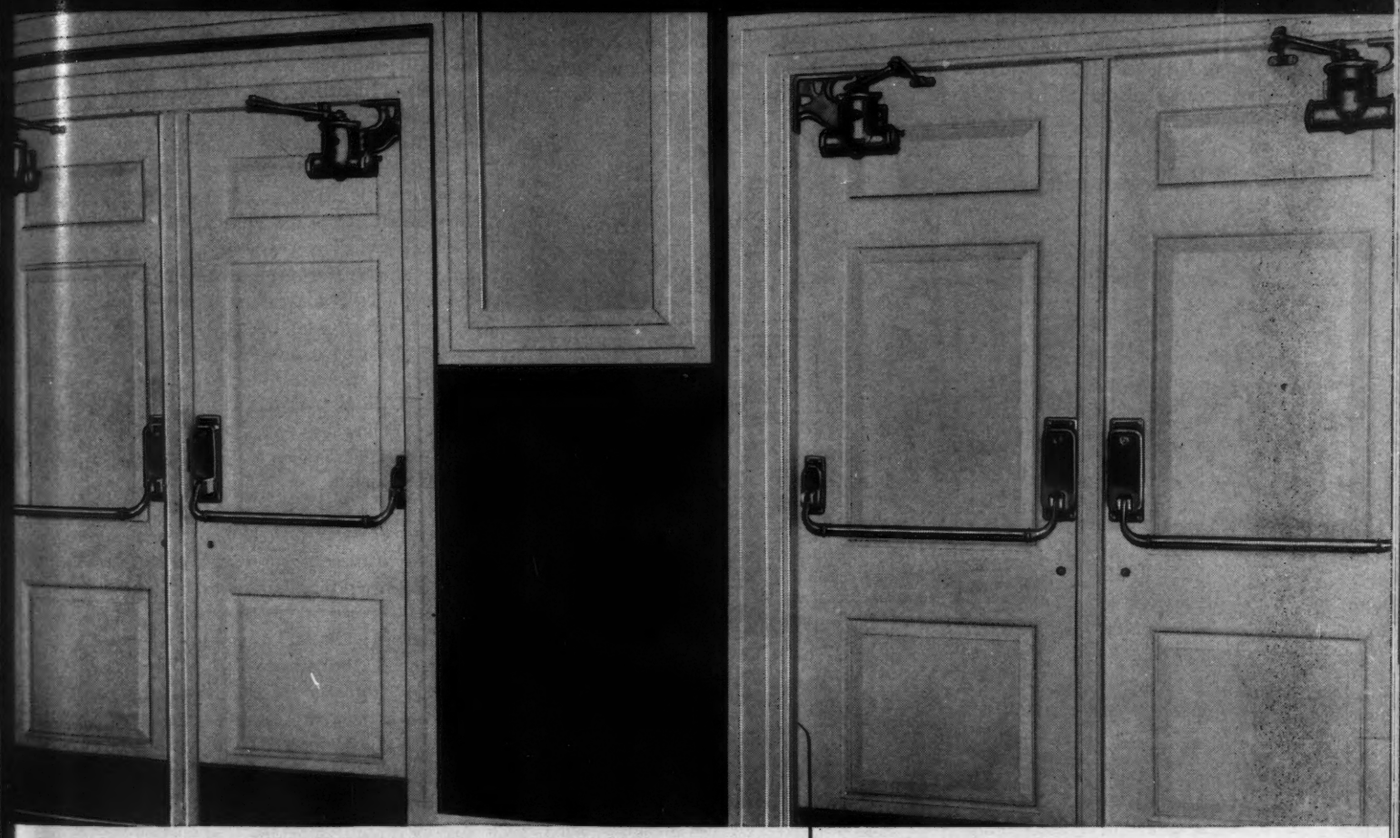
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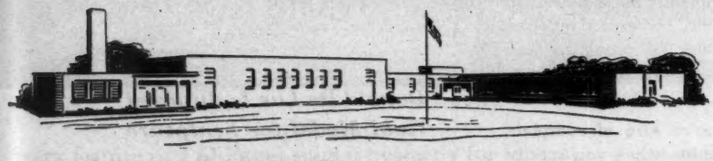
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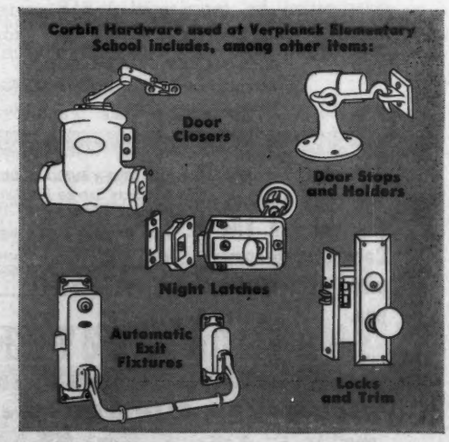




Verplanck Elementary School is the larger of two elementary schools opened last September in fast-growing Manchester, Conn. Designed for 660 pupils through Grade 6, it contains 18 regular classrooms, 2 kindergartens, library, cafeteria with kitchen, auditorium-gymnasium, general activities room, combination play—scout activities room, 2 teachers' rooms, nurses' suite, principal's office and conference room. ***Architect:*** Keith Sellers Heine, Hartford; ***Contractor:*** The Alexander Jarvis Company, Manchester; ***Corbin Hardware Supplied By:*** F. T. Blish Hardware Company, Manchester.

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 (*Continued from page 242*)

laborative problem on the redevelopment of the South Side of Chicago, in which students of planning, architecture and landscape architecture are engaged.

Mr. Woodbury is conducting a student problem on the relocation of industry in urban areas. Now director of the Urban Redevelopment Study, he is a former vice chairman of the Chicago Housing Authority and during the war was assistant administrator of the National Housing Agency.

• Two appointments in the Department of Architecture for the Spring quarter have been announced at Stanford University.

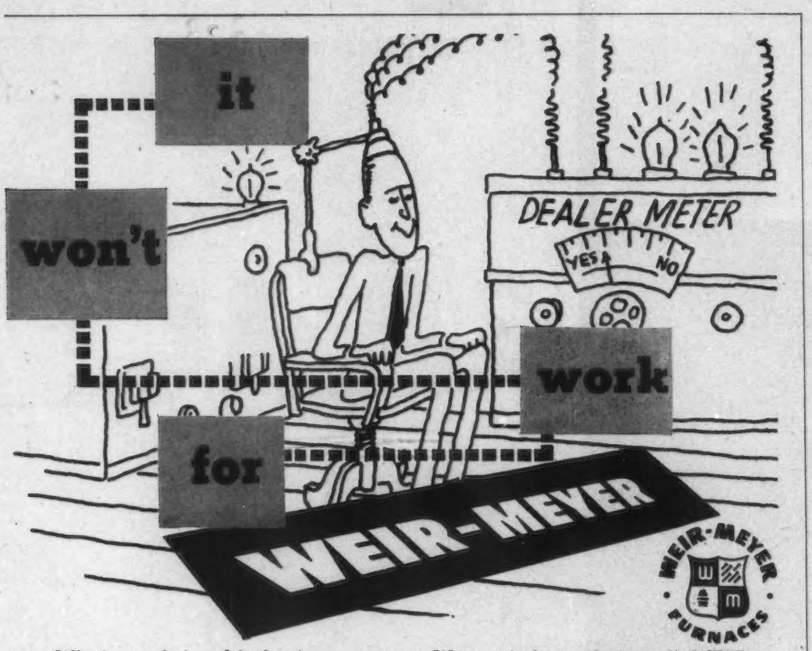
Ernest A. Grunsfeld of Chicago will serve as a visiting lecturer in architecture and critic in courses of architectural design.

Dwight A. Coddington of San Francisco will also be a visiting lecturer in architecture, covering mechanical engineering for architects.

• Spero Paul Daltas has been granted a leave of absence from his Fulbright project in Italy to be visiting critic in architecture at the Royal Academy of Denmark. Mr. Daltas, who received his B.Arch. at the University of Minnesota in 1943 and his M.Arch. at Massachusetts Institute of Technology in 1948, will conduct a course in design for advanced students in collaboration with Eric Christian Sorensen, architect formerly on the M.I.T. staff, and Mogens Boertmann, Danish architect. Mr. Daltas will also deliver a series of lectures on American, European and Near Eastern architecture and city planning.

Mr. Daltas, who has worked in the offices of Carl Koch & Associates, Cambridge, Mass., and Long & Thorshov, Inc., St. Paul, Minn., had a Prix de Rome Fellowship in 1949–1950 and 1950–1951. He is also a 1950–1951 Fulbright scholar.

• Architect Marcel Breuer has been appointed visiting lecturer and critic for part of the Spring quarter at the School of Architecture of Georgia Institute of Technology. In announcing the appointment, Prof. Harold Bush-Brown, F.A.I.A., director of the School, said Mr. Breuer's visit initiates a series of visits to the school by leading architects in practice.



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AWARDS

Donald De Lue Is Awarded Gold Medal for Sculpture

His panels for the Harvey S. Firestone Memorial in Akron, Ohio, won for Sculptor Donald De Lue the Architectural League of New York's annual Gold Medal for "a fine example of architectural sculpture fitting to its setting with excellent execution."

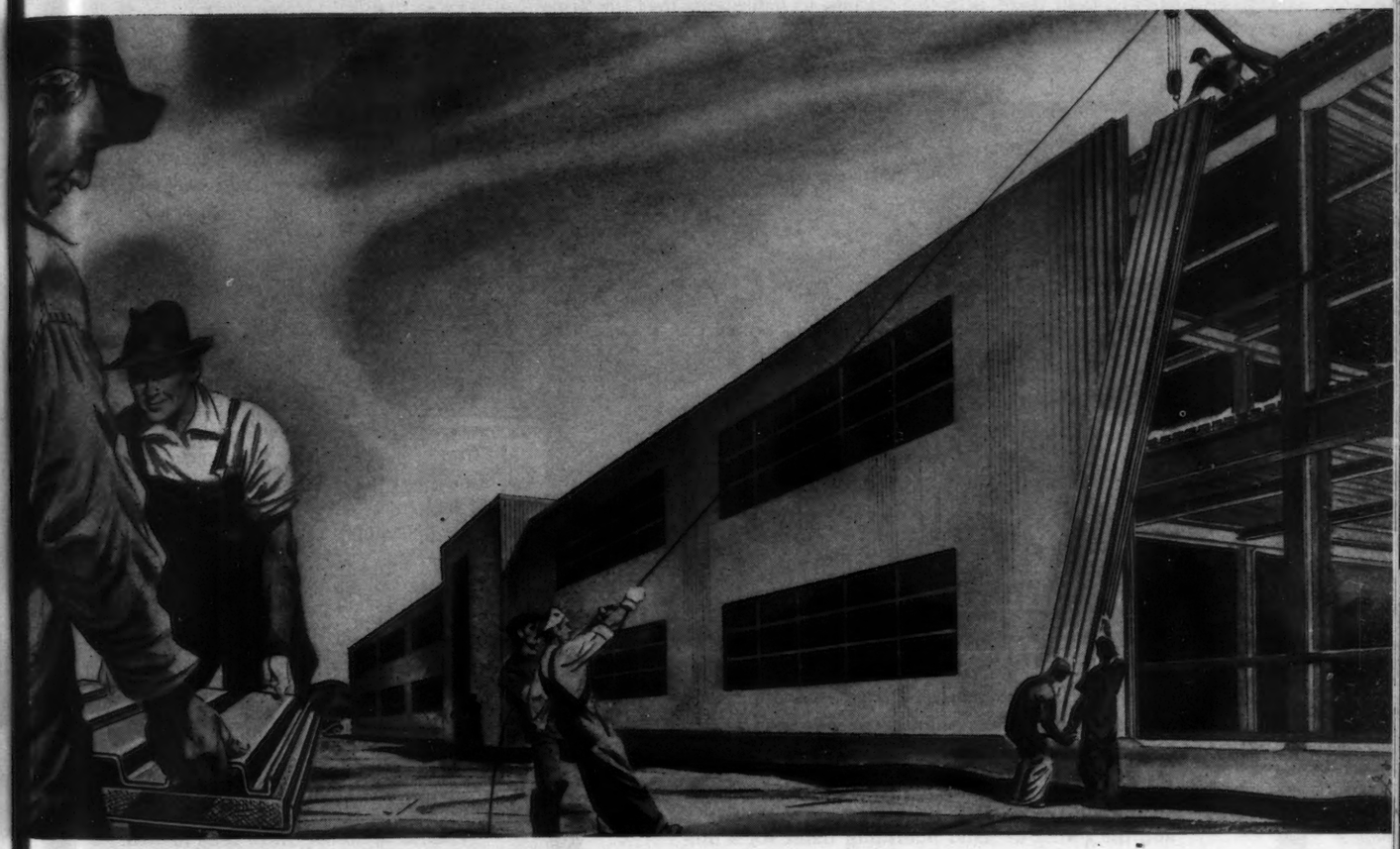
"Mind and the Universe" was the theme of the memorial panels.

Mr. De Lue received the award at a dinner at the Architectural League at which the several speakers called for renewed collaboration between sculpture and architecture.

The vital importance of this renewal was emphasized by the principal speaker, Paul Manship, president of the Ameri-

(*Continued on page 246*)

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(*Continued from page 244*)

can Academy of Arts and Letters. The kind of architectural "functionalism" which forbids all ornamentation is "not necessarily" an expression of the desire of the people, he suggested.

Leo Friedlander, a previous winner of the Gold Medal in sculpture of the Architectural League, said bluntly that there really is no sculpture today. The reason he found is that there is no longer any framework for sculpture: no architecture. The architect as we know him, said Mr. Friedlander, is "a relic of the past"; and the new architecture and the new sculpture await emergence of a new kind of architect-engineer with an aesthetic sense to match his regard for function.

Wheeler Williams, president of the National Sculpture Society, found reassurance in indications that the "isms" that came in recent years in art are on the wane both abroad and here. "Now we can hope that sculpture which will speak to people of tomorrow as well as those of today, without literary props, is in for a tremendous future in this great country of ours."

• Frank Lloyd Wright was presented with the medal of honor of the Philadelphia Chapter of the American Institute of Architects at a luncheon following the opening at Gimbel's in Philadelphia of the exhibition of his work which will later be shown at the Strozzi Palace, Florence, and in other cities of Europe.

• Earl T. Heitschmidt, F.A.I.A., of Los Angeles, was chosen to receive this year's construction industries achievement award at the annual industries banquet March 15.

• Donald I. Bohn, chief electrical engineer of the Aluminum Company of America, will receive the 1950 Benjamin G. Lamme gold medal at the summer general meeting of the American Institute of Electrical Engineers. The award is being made in recognition of Mr. Bohn's "pioneering development and application of electrical equipment for controlling rectifying systems in the production of aluminum."



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COMPETITIONS

State of Virginia Holds Competition on Memorial

Virginia architects have been invited to submit examples of their work in a preliminary competition for design of a "Living Memorial" to all Virginians who served in World War II.

A commission created by the State General Assembly is charged with carrying out the project.

Not less than five nor more than eight architects will be selected from the preliminary competition to enter a final competition for actual design of the memorial. The competition will be operated in accordance with the procedure recommended by the American Institute of Architects.

The selected contestants will each be paid a fee of $1000 (as partial expense reimbursement) when their final drawings are submitted. In addition, any

(*Continued on page 248*)

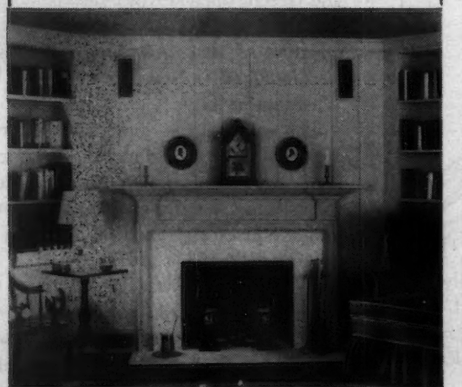
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NO LIMIT TO DESIGN. A versatile architect, Carl Kemm Loven has designed scores of beautiful homes, summer camps and hunting lodges of every style and decorative treatment. The Heatilator unit fits into his plans perfectly because it allows complete freedom of architectural expression with no restrictions on mantel design or use of materials. It is a scientifically designed, heavy-gauge steel form, complete from hearth to flue, around which any style of fireplace can be built.

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HEATILATOR *America's Leading* FIREPLACE

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(*Continued from page 246*)

licensed, registered and resident Virginia architect may submit designs in the competition without reimbursement fee.

The winning competitor, to be selected by a jury of two nationally known architects and one Virginia citizen, is to receive the final contract. If for any reason he does not, an additional fee of $4000 will be paid to him.

The memorial building is to contain a "Shrine of Memory"; a small auditorium; and provision for the state headquarters for the Adjutant General and the National Guard, for the Division of War Veterans' Claims, and for recognized representative veterans' organizations. The site is to be in Richmond, and the total cost must not exceed $1 million.

Leslie Cheek Jr. of the Virginia Museum of Fine Arts, Boulevard & Grove Avenue, Richmond 20, Va., is professional adviser for the competition.

Virginia architects may associate themselves with one or more non-resident architects, who will be regarded only as associates. Personnel of any teams thus formed for the general competition cannot be changed for the final competition without written consent from the professional adviser.

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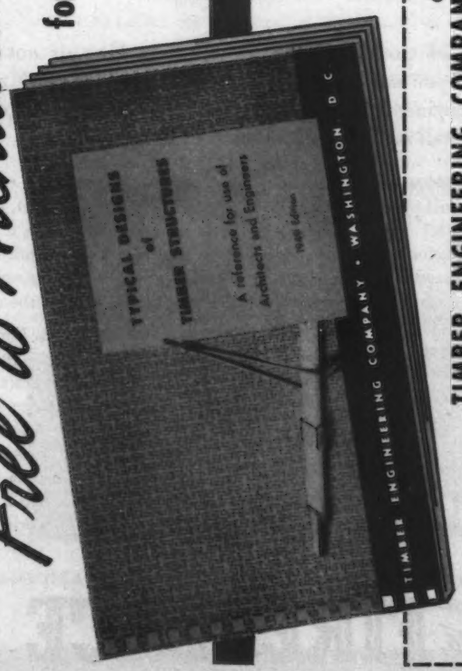
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EXHIBITIONS

Architects' Present Exhibit For Western Massachusetts

The Architectural Society of Western Massachusetts and the George Walter Vincent Smith Museum jointly presented the first public exhibition of the work of architects of the area at the Museum building in Springfield from March 11 to April 1.

The exhibit was planned to help forward public understanding of the architect's service to the community. The accompanying program devoted three pages to discussing "What is an architect?" and "What is architecture?" in simple, direct terms.

On display were some 250 exhibits — sketches, plans, renderings, working drawings and models — representing 23 architects in the area.

Otto E. Hermes was chairman of the exhibition committee, which included Louis C. Hinckley and Max R. Uhlig.

Work of Greene and Greene On Exhibit at the Octagon

An exhibition of the work of Greene and Greene opened April 9 in the administration wing of the Octagon, headquarters of the American Institute of Architects, 1741 New York Ave., N.W., Washington, D. C.

The work of the Southern California architects who pioneered the California style 40 years ago is shown chiefly through plans and photographs of seven major houses and gardens designed by the firm from 1903 to 1914.

The exhibition was prepared by the Southern California chapter of the A.I.A. with the assistance of Mrs. Jean Harris of Los Angeles, who has undertaken a complete study of the firm's work. (See ARCHITECTURAL RECORD, May 1948, pages 138–140.) After the Washington showing, the exhibit will be circulated under the sponsorship of the Institute.

(*Continued on page 250*)



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(*Continued from page 248*)

NEW OFFICERS INSTALLED AT ARCHITECTURAL LEAGUE

Harold R. Sleeper was installed as president of the Architectural League of New York for his second consecutive term in traditional ceremonies held at the League following the annual dinner on April 12.

Other officers are: Helen Treadwell, Jane Wasey, Alfred Geiffert III, Philip C. Johnson, Fred N. Severud and George C. Rudolph — vice presidents; Jedd Stow Reisner — secretary; John W. Pickworth — treasurer.

Members of the Committee on Scholarships and Awards are Richard F. Bach, Janet Darling, Elwyn Seelye and Harold W. Rambusch.

Hugh W. Ferris was master of ceremonies for the installation ceremonies, which opened with a procession led by past presidents and Gold Medalists of the League.

The program closed with a discussion by Mr. Sleeper of the League's plans for the coming year. A project to offer schoolchildren of the city some basis for understanding of architecture and allied arts is one of the new features planned.

ARCHITECTURE MUST SERVE PEOPLE, MEETING IS TOLD

"Architecture is essential business," asserted Edmund Bateman Morris, Washington architect, in a talk before members of the East Pennsylvania chapter of the American Institute of Architects.

"Upon us as architects rests the responsibility to give our clients the best in physical and psychological environment. Everything we as architects design must favorably reflect conditions surrounding the labor, living and leisure of our people," Mr. Morris said.

Mr. Morris was principal guest speaker at the annual Ladies' Night meeting of the chapter, held April 3 at the Fox-Hill Country Club, West Pittston, Pa.

Col. Thomas H. Atherton, president of the chapter, introduced Mr. Morris. Samuel Z. Moskowitz, immediate past president, was in charge of the evening, assisted by Joseph Hoban Jr., Edward Wassell and Jerome McGlynn.

BROOKLYN CHAPTER NAMES STUDENT AWARD WINNERS

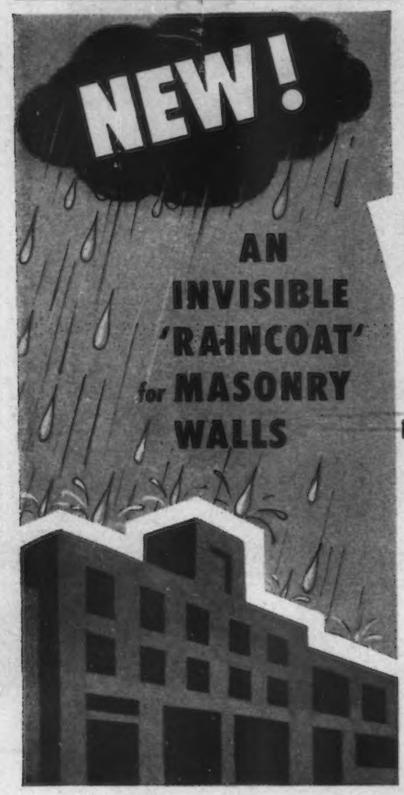
Marvin E. Goody, a student at the Massachusetts Institute of Technology, has been awarded first prize of $100 in the annual architectural competition of the Brooklyn Chapter of the American Institute of Architects.

The award to Mr. Goody was made with seven others at a dinner meeting of the chapter at which Harold D. Hauf, editor-in-chief of ARCHITECTURAL RECORD, was the principal speaker.

Second prize of $50 went to Edward Crain of Pratt Institute and third prize of $25 to Elliott Saltzman of M.I.T. Vito P. Battista, chairman of the chapter committee on education, also presented honorable mention awards to Peter A. Giarratano, Walter E. Levi, Robert C. Reichenbach, Robert Welz and Robert A. Wenneis, all architectural students at Pratt Institute.

Subject of the competition was "a

(*Continued on page 254*)



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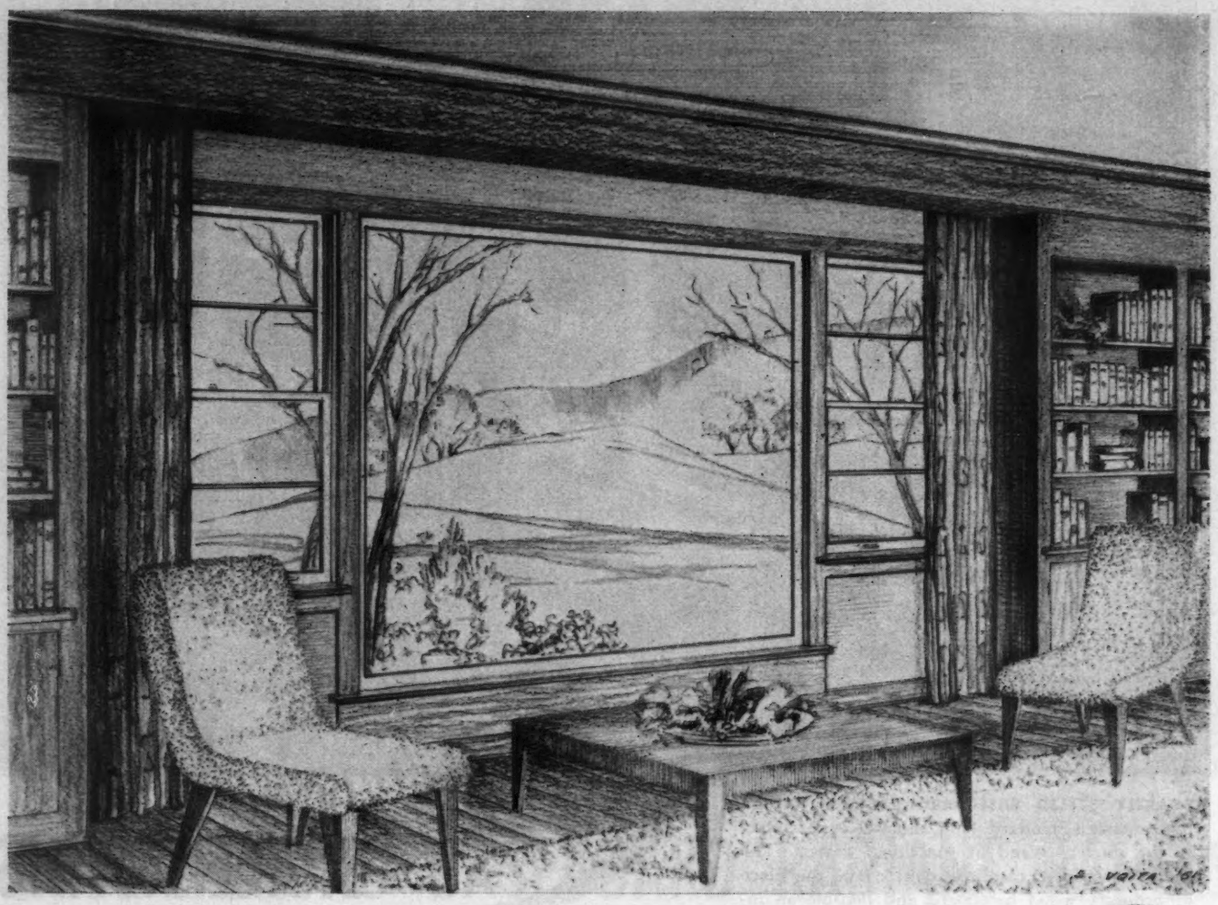
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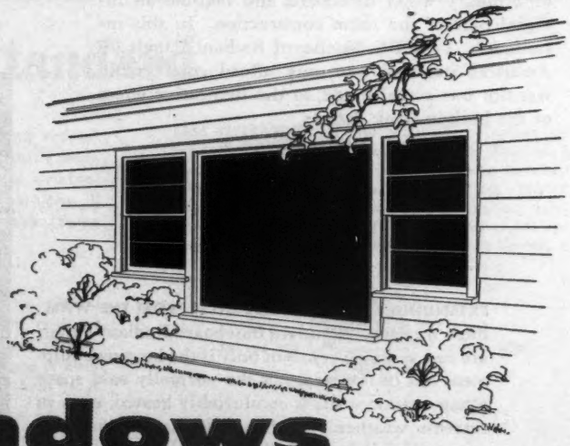
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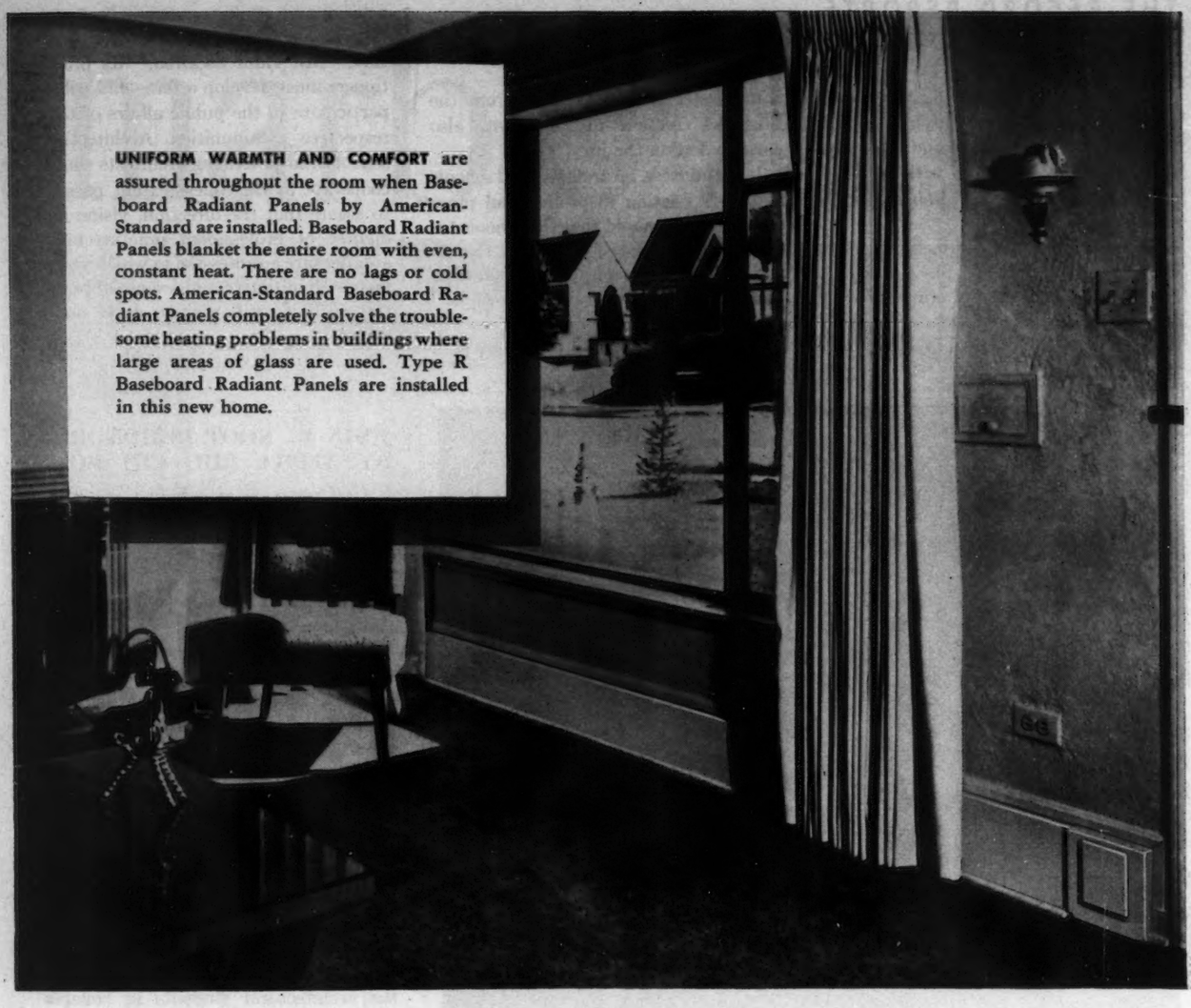
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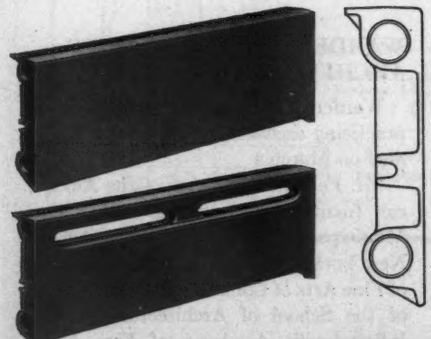
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FREE LITERATURE: If you would like further information about American-Standard Baseboard Radiant Panels, contact the American-Standard sales office serving you and ask for a free copy of Form No. 736, which describes installation practice, or Form No. 773, which illustrates varied applications of Baseboard Radiant Panels in homes.

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(*Continued from page 250*)

civic group in a local neighborhood (Bushwick Section, Brooklyn)" to replace the typical obsolete and remotely located public buildings with a well-planned and coordinated group of community buildings.

Architects on the jury included William Ballard, Henry S. Churchill, Nembhard Culin and Lorimer Rich. Representing the chapter were Mr. Battista, Joseph Mathieu and Herman Sohn. Peter Norrito, realtor from the Bushwick section of Brooklyn, also participated on the jury.

In his address, on architectural schools and their relation to professional practice, Mr. Hauf noted that the schools today draw much more heavily on the experience and judgment of the profession than practicing architects "as a whole" draw on the schools.

"If the profession of architecture is to achieve and retain a commanding position in our social and economic structure," Mr. Hauf declared, "its practitioners must develop a force and will to participate in the public affairs of their respective communities. Architectural schools and practicing architects should cooperate to the fullest extent possible to assure that the direction, vision and dignity of professional practice make architecture a profession in which young men with initiative and a sense of public responsibility will wish to carve out a career."



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For full details about the *roofing with a future* see A. I. A.—12—C—1. If you don't have a copy write to the address below.



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JOHN W. ROOT IS HONORED BY ALPHA RHO CHI POST

John Wellborn Root will become the fourth architect in history to hold the position of Master Architect of Alpha Rho Chi Fraternity when he is installed in ceremonies to be held May 11 in Chicago.

Mr. Root, a partner in the firm of Holabird and Root and Burgee, will be initiated immediately following the close of the national convention of the American Institute of Architects. The ceremony will take place in the Michigan Room of the Edgewater Beach Hotel.

Only previous holders of the honor were Dr. Nathan Clifford Ricker, founder of the School of Architecture at the University of Illinois; Cass Gilbert Sr.; and the late Eliel Saarinen.

Alpha Rho Chi was founded in 1914 to organize and "unite in fellowship" the architectural students in colleges and universities of America and to promote artistic, scientific and practical efficiency of the younger members of the profession.

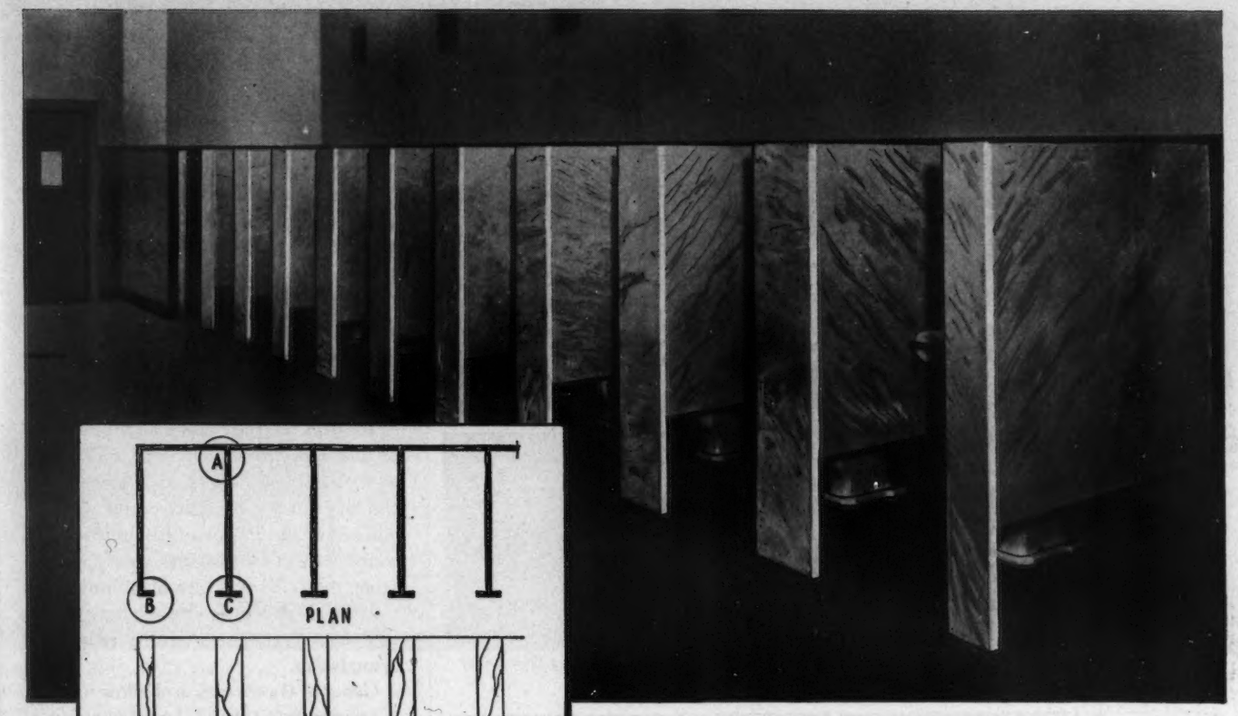
WARDEN H. FENTON DIES; ARCHITECT IN NEW YORK

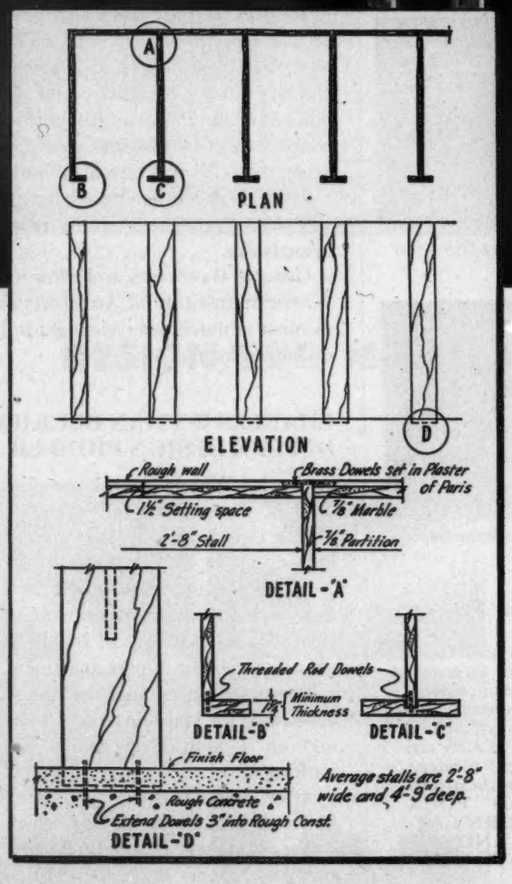
Warden H. Fenton, for many years a practicing architect in New York City, died on March 1.

Mr. Fenton, a member of the American Institute of Architects and of the Municipal Engineers of the City of New York, was a graduate of the School of Fine Arts of Columbia University and of the School of Architecture of the Pennsylvania Academy of Fine Arts, Philadelphia. He was awarded the Cresson Traveling Scholarship in architec-

(*Continued on page 256*)

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(*Continued from page 254*)

ture for two years' study in Europe at the École des Beaux Arts (Atelier Bernier) in Paris. He was also an alumnus of the American Academy in Rome.

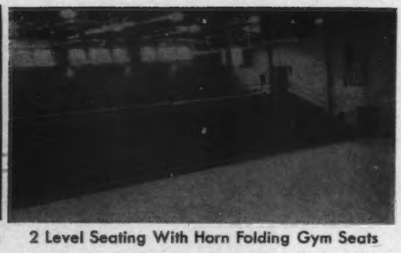
In 1918–19, Mr. Fenton served as supervising engineer for Navy housing, as assistant to Rear Admiral H. H. Rousseau and as a member of the Consulting Architectural Committee for the Design of Navy Yards and Naval Stations.

For ten years, from 1922 to 1932, Mr. Fenton was a junior member of the architectural firm of Hiss & Weekes. In 1938 he was appointed director of the Bureau of Architecture of the Department of Public Works. In this post he was in charge of design, plans and specifications for buildings of all types with a total value of $45,000,000. He was technical director of the New York State Division of Housing in 1941–42.

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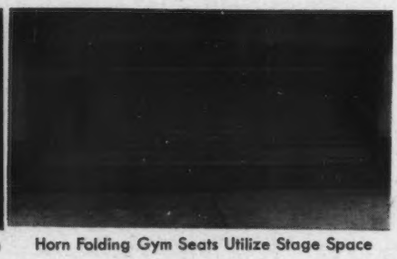
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MAJ. GEN. ALLISON OWEN, 81; ARCHITECT, CIVIC LEADER

Maj. Gen. Allison Owen, 81, who died late in January in his native New Orleans, was known as widely for his activities in civic affairs as for his contributions to the architecture of the city.

General Owen, described editorially by a New Orleans paper as "a great citizen of the old school," was still active as an architect at the time of his death and was president of the New Orleans Parkway Commission.

Buildings in New Orleans designed by General Owen included the Criminal Courts Building at Tulane and Broad Streets, the Catholic Seminary, and many church and school buildings.

General Owen attended Boston Tech and had taught history of architecture at Tulane University in addition to his practice. He commanded the Washington Artillery in the First World War and in the Mexican border hostilities just before that war. He was retired in 1933.

In 1924 General Owen was president of the New Orleans Association of Commerce. He had served as a member of the city survey committee and was organizer of the Parkway Commission, of which, except for rare intervals of war or other duty, he was president until the time of his death. He received a plaque in 1950 for 40 years of service to the commission.

General Owen was a Fellow of the American Institute of Architects and a member of numerous civic organizations in New Orleans.

CHARLES WYMAN BUCKHAM, DUPLEX DESIGN PIONEER

Charles Wyman Buckham of Scarsdale, N. Y., architect and inventor, died March 11 in New York City after a long illness.

Mr. Buckham, who retired 20 years ago, was a pioneer in developing the interlocking floor type of building construction and the duplex apartment. He held patents on an inclined ramp as a substitute for stairs in school buildings and on a multi-level garage for the parking of cars.

After graduating in 1891 from the University of Vermont (of which his father, Matthew Henry Buckham, was president from 1871 to 1910), Mr. Buckham studied architecture at the National Academy of Design and at Columbia University. Later he studied at the Atelier Dure and Pascal in Paris.

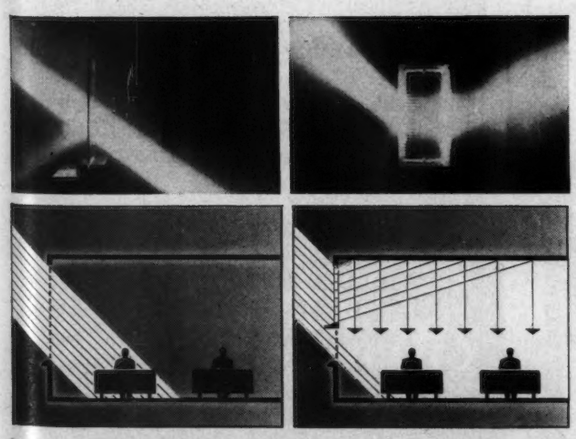
Mr. Buckham designed the Pathologi-

(*Continued on page 258*)



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—by the pioneers of Daylight Engineering

(*Continued from page 256*)

cal Building in Waterbury, Vt., and the State Office Building in Montpelier, Vt. He was the architect of Morrill Hall for the State Agriculture Department of the University of Vermont.

He joined Warren and Westmore of New York, designers of Grand Central Terminal, in 1900. Later he was with Curren & Hastings, architects of the New York Public Library.

Mr. Buckham was superintendent of construction of several Carnegie branch libraries in New York and was designer of the Gainsborough Studios there. He also redesigned the Salmagundi Club in New York.

THEODORE T. KNAPPEN, 50; CIVIL, HYDRAULIC ENGINEER

Theodore Temple Knappen, civil and hydraulic engineer who was senior partner of the Knappen Tippetts Abbett Engineering Company, died March 20 in New York. He was 50 years old.

Mr. Knappen organized his own firm in 1942 and its projects have included design of the ports of Amuay, Venezuela, and Haifa and Tel Aviv in Israel; reports on the development of the ports of Philadelphia, Baltimore, Buffalo and Miami; plans for hydro-electric and irrigation projects on the Gediz and Menderes Rivers in Turkey and on the Artibonite River in Haiti; the designing of a vehicular tunnel in Buenos Aires; and designs for a number of highways, airports, bridges and dams in the United States.

A graduate of the United States Military Academy at West Point, Mr. Knappen had served the Army Corps of Engineers first as an officer and later as a civilian employee. He had also been associated with several private firms and was with Parsons, Klapp, Brinckerhoff & Douglas, New York consulting engineers, as a partner just before he formed his own firm.

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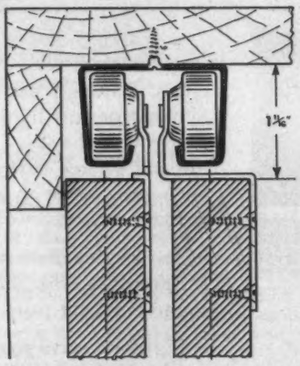
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CHARLES ADRIANCE MEAD, FORMER PRATT LECTURER

Charles Adriance Mead, consulting engineer, of Montclair, N. J., died on March 29, three days before his 81st birthday.

Mr. Mead was a graduate of Pratt Institute in Brooklyn, and after serving there as an instructor in mechanical and architectural drawing continued to lecture on structural engineering until 1926.

He worked for numerous engineering firms in New York from 1898 till 1907 and from then until 1940 was chief engineer of the division of bridges and grade crossings of the New Jersey Railroad Commission and the Public Utilities Commission of the State of New Jersey.

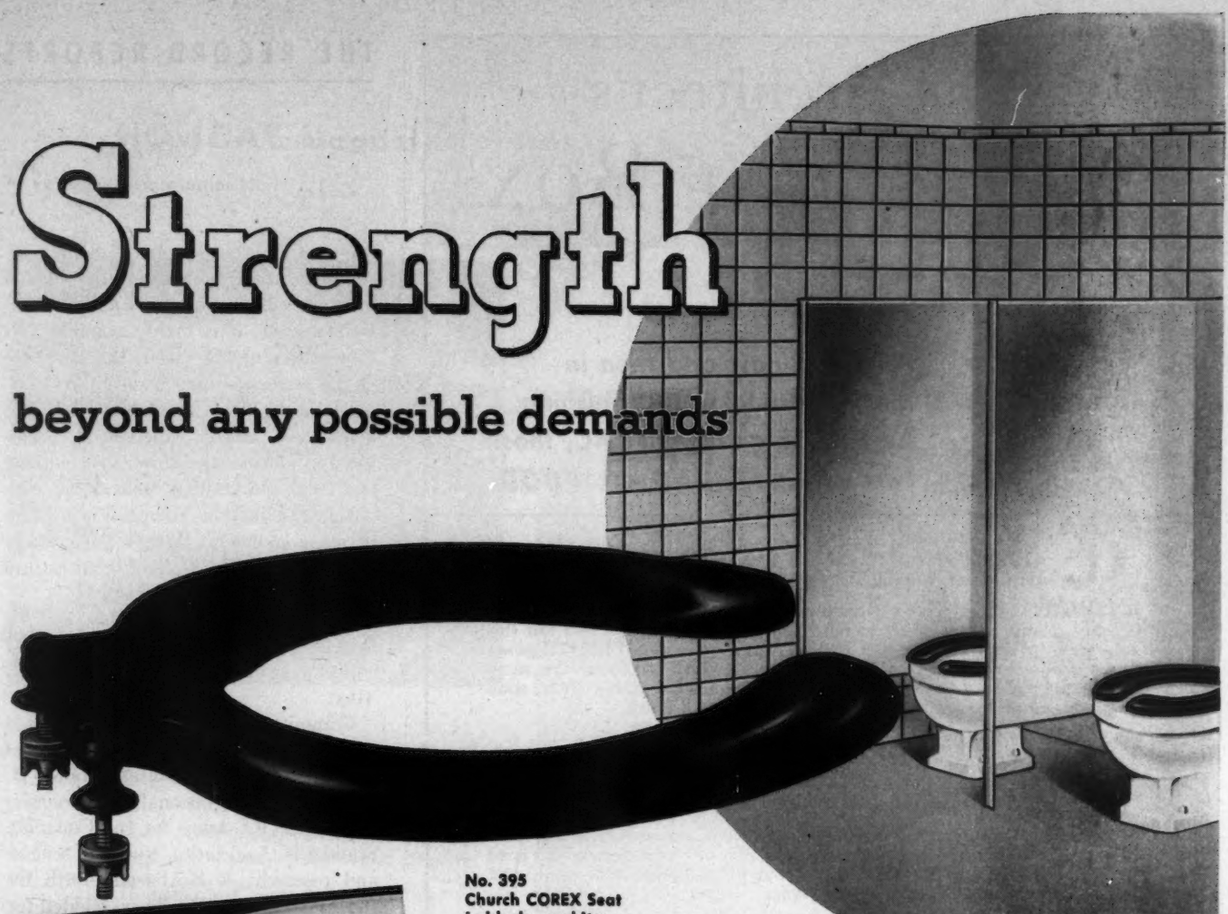
WILLIAM RALPH SQUIRE, 79; DESIGNER OF EBBETS FIELD

William Ralph Squire, 79, a structural engineer and designer of the original Ebbets Field in Brooklyn, died March 24 in New York.

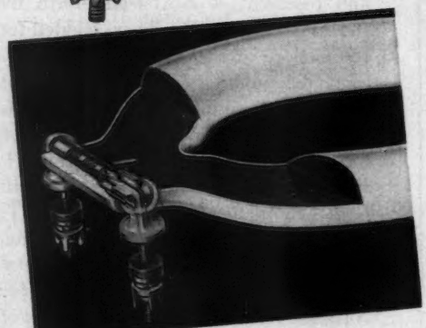
Mr. Squire was with the American Bridge Company from 1908 to 1910 and then spent three years with the engineering firm of Post & McCord before organizing his own company of W. Ralph Squire & Son in 1913.

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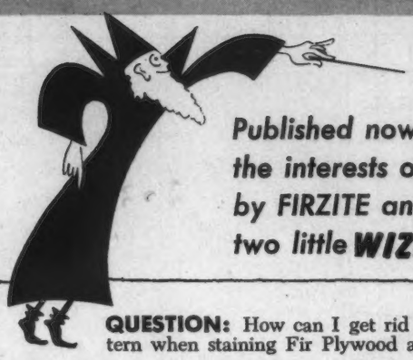
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The Architect's Question Box



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QUESTION: What's the best way to bring out the beautiful *natural* finish on wood panelling and woodwork?

ANSWER: Whether the panelling is soft wood or hardwood, the most effective way to bring out its *natural* beauty of grain and color, is to apply two coats of SATINLAC about four hours apart; steel wool, dust off and finish with one coat of paste wax.

QUESTION: Is there any one "best" method to obtain a blond or pickled finish?

ANSWER: For such purposes, both on hard wood or soft, plywood or solid, WHITE FIRZITE produces a clear "woodsy" effect without a "painty" look. Complete the finish with SATINLAC. It's water clear—*so* necessary with these effects.

QUESTION: I recently had a job using Fir Plywood that got the usual coats of undercoat and enamel; and still we couldn't lose the grain raise. Any suggestions?

ANSWER: A first coat of FIRZITE will minimize or virtually eliminate face checking and grain raising on painted or enamelled jobs.

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THE RECORD REPORTS

CANADA

(*Continued from page 18*)

ceived top attention by Canada's architects. Said President Smith: "Should marked redeployment of men and materials occur, it is highly possible that some adjustments within the structure of the profession may be necessary.

"It is no great secret that there is a dearth of really experienced architectural assistants. How to complete our local and civilian obligations, with national obligations arising, is a problem of some moment. Within government circles, the lack of trained architectural personnel is admittedly acute."

The 1952 annual assembly will be held in Vancouver at a date to be set by council, probably late April or early May.

Committee chairmen who reported were Dr. A. J. Hazelgrove for the Royal Institute of British Architects; James H. Craig for the National Construction Council; P. C. Amos for the Canadian Standards Association and for science and research; J. Roxburgh Smith for the Arts Council; W. Bruce Riddell for the College of Fellows; J. C. Meadowcroft for public relations; Prof. Kent Barker for planning; R. Schofield Morris for legal documents; Harold Lawson for exhibitions and awards; Arthur H. Eadie for the Institute's editorial board; L. E. Shore for duty on plans; A. T. Galt Durnford for architectural training.

Mr. Amos' committee on science and research had warm commendation for National Research Council's Division of Building Research directed by Robert F. Legget.

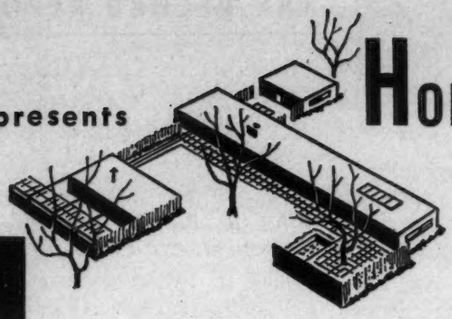
(*Continued on page 262*)



Graham Warrington Photography

Medical and Architects' Offices, Vancouver, B. C., also won Silver Medal in the Massey awards. Gardiner & Thornton, architects

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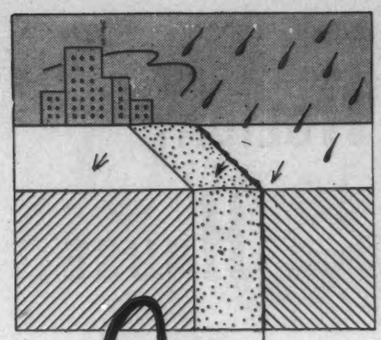
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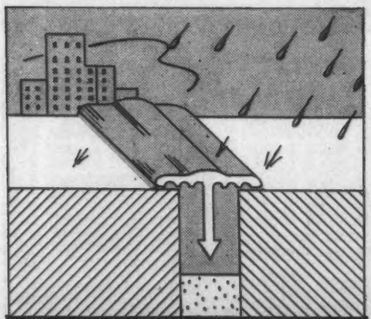
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AR-5-51

THE RECORD REPORTS

CANADA

(*Continued from page 260*)

John B. Parkin Associates Wins in O.A.A. Competition

John B. Parkin Associates, Architects, of Toronto, has been awarded the commission for the new Ontario Association of Architects headquarters building in Toronto.

Parkin Associates' entry was judged best of 36 submissions in a design competition held by the Association. In addition to this award, three honorable mentions were made. Those who received them were George P. Hassig, Port Credit; C. R. Worsley and Page & Steele, Toronto.

In announcing the names of the winning firms, President Earle L. Sheppard said that the standard of design displayed was very high: "Only a small percentage — say 10 per cent — of the designs submitted were traditional in character, the rest being contemporary."

The competition was launched last July, shortly after a suitable building site was acquired. All 500-odd members of the Association in Ontario were eligible to compete, except those on the executive and premises committees, the competition jury, and their office staffs.

Accommodation required included a board room, library, general offices and club facilities.

Members of the jury were Prof. E. R. Arthur, Murray Brown and F. H. Marani, chairman. In its report, the jury pointed out that it sought in the building "the character which one might expect in the headquarters of a society of professional men engaged in the art of architecture."

The plan of the winning design impressed the jury with its extreme simplicity. "It presents an air of spaciousness, and the contact made with the O.A.A. secretary and the grouping of his office with the board room could not be improved on. Control of the library is equally good. As in the case of some other plans submitted, the building is protected, by a blank wall, from any new construction on the south."

Unfortunately for the architects, their new headquarters does not belong to a category of building approved by the government at this time. However,

(*Continued on page 264*)

HUBBELLITE TERRAZZO for Conductive Floors

MEETS N.F.P.A. OPERATING ROOM REQUIREMENTS



Until material restrictions went on, Hubbellite Terrazzo was being widely used throughout hospitals: in kitchens, wards, locker rooms, corridors, as well as in operating rooms, because it inhibits on its surface the growth of many molds and bacteria; repels roaches and resists cooking fats and greases.

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Hubbellite Terrazzo can be applied over any structurally sound, existing floor, as thin as ½" or as thick as necessary to build up nonlevel floors. It is available in warm reds, rich greens, soft blue-grays and tans with countless varieties from marble chip combinations.

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Mallman, W. L., Michigan State College, 1941. A Bacteriologic Study of a New Sanigenic Flooring.

Farrell, M. A., and Wolff, R. T., Penna. State College, 1941. Effect of Cupric Oxychloride Cement on Microorganisms.

Researches of Mellon Institute, American Chemical Society, Vol. 19 (1941).

Hazard, Frank O., Wilmington College. Roach-Repellent Cement.

Jenkins, P. W., Sr., Fellow, Mellon Institute. A Functional Floor Surface.

Write for HUBBELLITE TERRAZZO Catalog and Color Chart

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Numerically, these standards include in addition to the Bowstring Truss—Flat Trusses as illustrated above left, A-Frames, High-Low Monitor type roofs and Longspan Designs.

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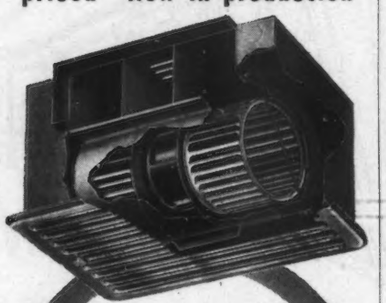
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THE RECORD REPORTS

CANADA

(*Continued from page 262*)

as soon as steel and other critical materials now needed for the defense effort are again freely available, a start will be made on construction.

H. Ross Wiggs Named to Lead Quebec Architects

H. Ross Wiggs of Montreal has been elected president of the Province of Quebec Association of Architects.

Mr. Wiggs was born in Quebec City and received his education at the Quebec High School for Boys and Ridley College, St. Catharines. He attended McGill University and the Massachusetts Institute of Technology, from which he was graduated in 1922 with the degree of Bachelor of Science in Architecture.

After serving a period of apprenticeship in New York, he returned to Montreal, where he worked in several architects' offices before establishing his own practice in 1933. His commissions have covered a wide range of residential, commercial and industrial buildings throughout the Province of Quebec as well as Ontario, New Brunswick and Nova Scotia.

Mr. Wiggs has been active on the council of the P.Q.A.A. since 1938 and was elected an associate of the Royal Canadian Academy of Arts in 1944. He is also an associate of the Royal Institute of British Architects.

Alberta Officers Are Named At Meeting Held in Calgary

Architects from all parts of the province attended the one-day annual meeting of the Alberta Association of Architects recently held in Calgary.

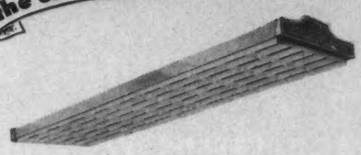
T. Gordon Aberdeen was reelected president. Also elected to office were: John Stevenson, first vice president; Cecil S. Burgess, Edmonton, second vice president; George W. Lord, Edmonton, honorary secretary; Ross M. Manley, Edmonton, honorary treasurer; K. C. Stanley, Edmonton, and V. E. Meech, Lethbridge, councillors.

Ontario Architects Award First Craftsmanship Medal

Norman Mackay, 23-year-old plasterer-apprentice, led the parade at the

(*Continued on page 266*)

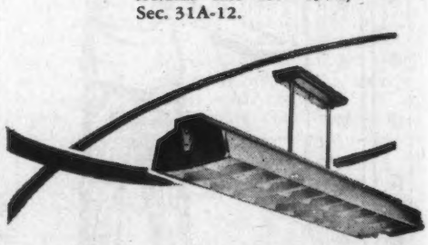
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Listed in Sweet's Architectural File for 1950, Sec. 31A-12.



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Hotel Vendome, Evansville, Indiana. Architect: Clifford Shopbell, for the original hotel; Fowler & Kargeo, for the new addition. Heating Contractor: H. G. Newman Plumbing Company.

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A story of sound heating system operation

"Give us a heating system that will stand the test of time", the owners of the new Hotel Vendome told their heating contractor in 1907. And so it was that the complete mechanical plant – including the Webster Vacuum Steam Heating System–was planned for long service life.

Five floors were added to the Hotel in 1913 . . . a 5-story annex was built in 1927–and both times there was an extension of the Webster Heating System.

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Charles J. Scholz, president, Hotel Vendome, Inc., and his sons, Norman F., and Frederick J., vice-presidents, are convinced that modern heating pays for itself – in satisfied guests and lower operating costs.

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THE RECORD REPORTS

CANADA

(*Continued from page 264*)



Douglas E. Kertland, Toronto architect, presents Craftmanship Award to Norman Mackay. Center: Bill Nelson of John Nelson & Son Ltd., Toronto plastering firm to which Mr. Mackay is indentured

graduation ceremonies of the provincial building trades training school at Ryerson Institute, Toronto.

Mr. Mackay was presented with the first Ontario Association of Architects award to a final-year apprentice who, after winning first prize in his own class, was judged by the instructing staff to be the most proficient of the first prize winners in all eight trades. Dignitaries from the architectural profession, the provincial government and the construction industry were present.

The award consists of a gold and enamel lapel button bearing the Association's seal. It is a tribute from the architects to the building mechanics in recognition of the importance of their work. In making it, the O.A.A. hopes that the craftsmen of tomorrow will strive to maintain the high standards of performance established during their apprenticeship.

Return to 1951 B.C. for Museum's Design Exhibit

Industrial Design 1951 B.C. – 1951 A.D. was the ambitious title of a recent exhibit at the Royal Museum of Archaeology at Toronto.

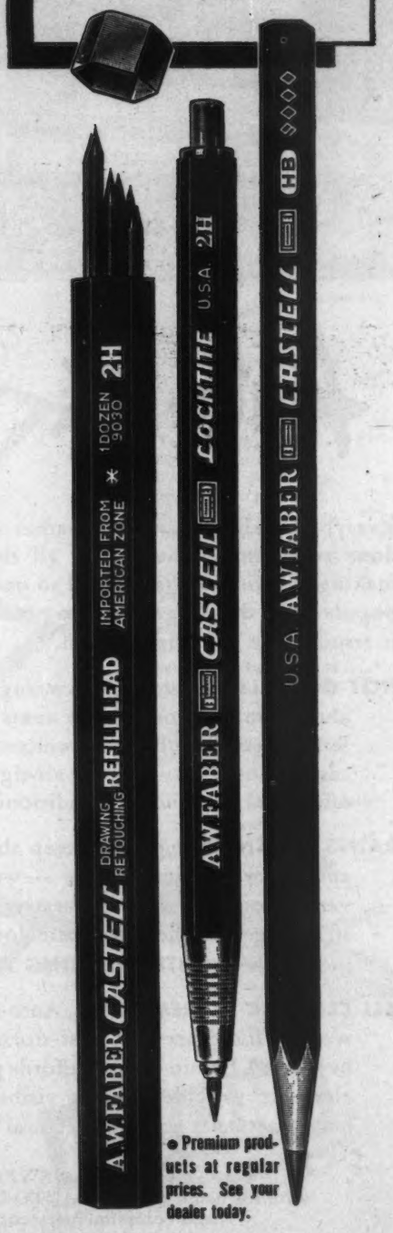
The display attempted to show the development of industrial design from ancient Egypt to the Atomic Age to make the point that industrial design is not something new.

(*Continued on page 268*)

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When planning any type of light-occupancy structure, it's sound judgment to take advantage of the fire-safety afforded by the use of Bethlehem Open-Web Steel Joists.

Bethlehem Open-Web Joists, used in combination with concrete floor slab and plaster ceiling, provide a floor and roof construction which is incombustible. This type of floor offers effective resistance to the spread of fire. Moreover, it stays firm and true for the life of the structure.

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THE RECORD REPORTS

CANADA

(*Continued from page 266*)

The first section dealt briefly with progress up to the early 19th century. The period of the Industrial Revolution, as an era of great practical achievement but of chaos in design, was covered less comprehensively than the last 75 years. The exhibit showed many of the attempts in this period to recover a true basis for design, and one whole panel was devoted to the school of thinking pioneered by the Bauhaus, as probably the most lasting in its effects. A series of panels supplemented by actual objects as examples was used to illustrate the varied manifestations of contemporary design.

Concluding the exhibition were panels containing statements by the Council of Industrial Design and the Society of Industrial Artists in Great Britain, the Institute of Design and the Society of Industrial Designers in the U.S.A., the National Industrial Design Committee and the Association of Canadian Industrial Designers in Canada itself.

The Museum expresses its interest in modern design by constant emphasis on the good quality of its collections rather than their age. The exhibition program summed up:

"Good design is not a 20th century idea; it is something at which the makers of objects have, by their own lights, always aimed. It is not concerned only with externals — the idea suggested by the word 'styling' — but with the whole form of the object. The keynotes of good design were defined 2000 years ago in three words: 'Appliance, Performance, Production.' That is: Is it attractive? Does it work? Can it be successfully produced in the chosen medium? These are the three questions which maker, seller and buyer of any object have to consider: a good design answers 'yes' to all three."

1950 House Completions Down

One of the minor shocks of 1950 was the dip in the number of houses completed.

Instead of the 95,000 units confidently expected, the final tally by D.B.S. showed only 87,299 completions. This is 234 less than the 1949 figure of 87,533.

(*Continued on page 270*)

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Statler Center in Los Angeles will be the ultimate in famous Statler service and guest convenience. For instance, to facilitate prompt accurate guest billing and interdepartment communication, Grover Transitubes are being installed.

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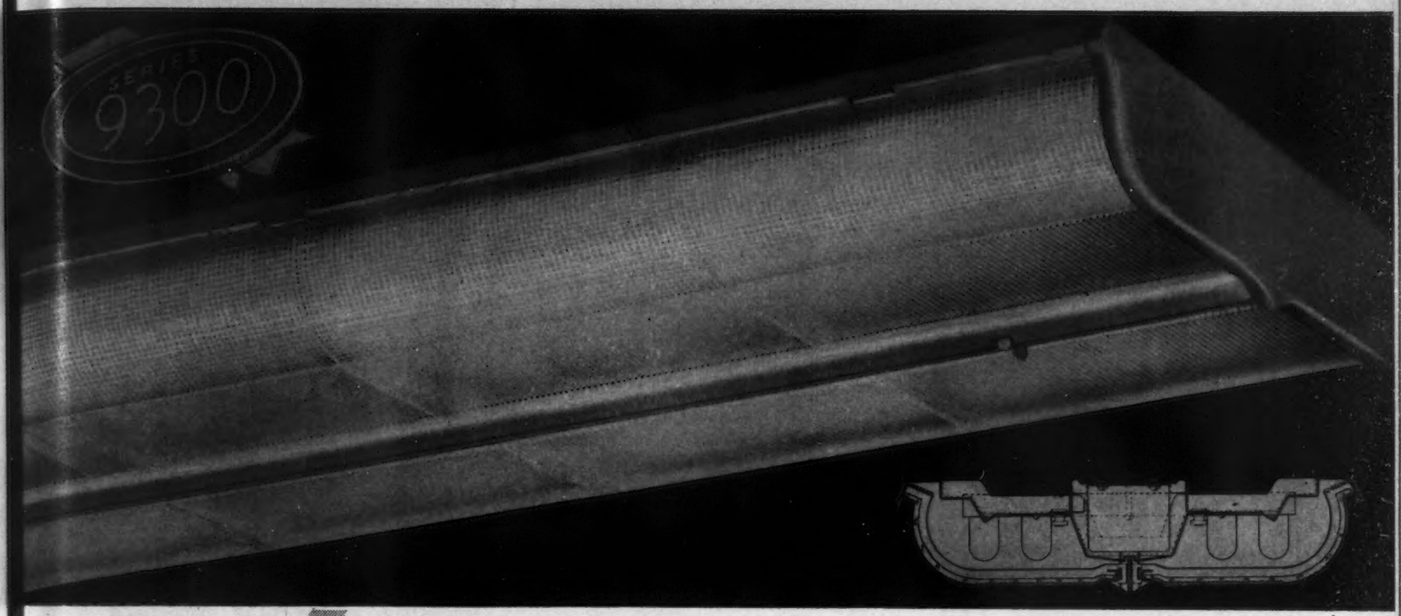
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Dramatic New Styling

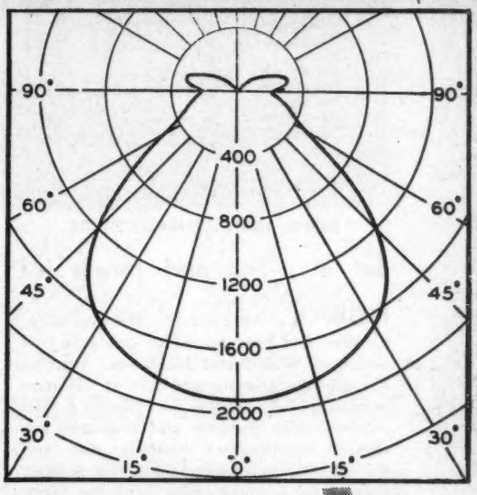
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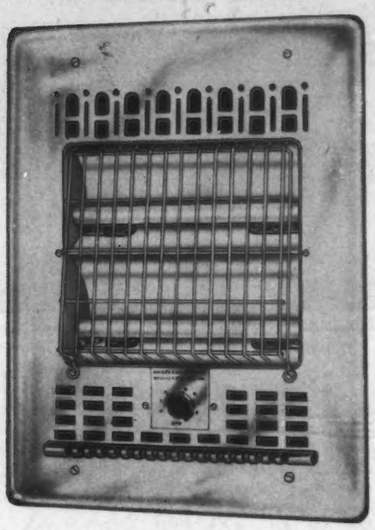
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THE RECORD REPORTS

CANADA
(*Continued from page 268*)

February Awards Continue Upward Trend in Building

Figures released by MacLean Building Reports on construction contracts awarded in February reflect continuation of the upward trend in building activity.

National total of $121,732,000, up $56,950,400 over the $64,781,600 registered for the same month last year, brought the cumulative two-month gain over 1950 to $159,315,500. Residential construction is still behind last year in initiation of new projects, but will be buoyed up by higher-than-usual carry-over from last season.

Engineering awards led other categories in the rise over last year largely because of the starting of the Quebec-Levis tunnel under the St. Lawrence River. The substantial increase shown by commercial construction in February was on the basis of scattered projects, only two of which ran over a million dollars. Industrial construction showed only a marginal gain, trailing at some distance behind residential work.

Two-month totals for various categories, in millions of dollars, follow: residential, $40.9 (down seven per cent from the same period in 1950); commercial and institutional, $75.4 (up 59 per cent); industrial, $79.6 (up 430 per cent); engineering $84.9 (up 465 per cent).

Shortage of Nails Is Felt; Eastern Areas Hardest Hit

As the 1951 building season gets under way, nails are becoming harder to find in eastern Canadian centers.

Shortage is particularly marked in 2½- and 4-in. common nails, essential for wood framing. Special types — finishing nails, roofing nails, blue nails — also are hard to find. Aluminum nails, not always available and somewhat higher in price, cannot be used for wood framing since their maximum length is 1¾ in.

Last year, wire nails entered Canada from England, Belgium, Germany, Austria, Poland and Japan. But imports accounted for only a small percentage of

(*Continued on page 272*)



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Farr Company Engineers offer complete laboratory services to bring you better air filtration

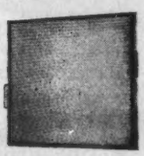
Your air conditioning system deserves the best in air filters and standard FAR-AIR* filters will meet most of your requirements. However, if you are faced with unusual dust conditions, Farr Company's modern, well-equipped laboratory will help you select the proper type of filter to meet your particular problem.

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*Award Winner... "for excellence in design"**

THE CRANE CRITERION LAVATORY

**The Annual Gold Medal Award of the Architectural League of New York "for excellence in design of industrial products for architecture" was awarded to Henry Dreyfuss, noted industrial designer for his design of the Crane* Criterion *Lavatory.*

Crane leads again with the award-winning *Criterion* counter-top lavatory. This new idea in bathroom fixture styling is typical of Crane progress—and one reason why Crane is the "*Preferred Plumbing.*"

The Crane *Criterion* lavatory is solid slab vitreous china in white or a choice of eight Crane colors. Designed for installation in a counter-top or as a free-standing unit. The spacious rectangular basin has the overflow at front. The smart new *Criterion* trim is brush-finish chromium with clear lucite handles and exclusive *Dial-ese* controls that operate at finger-tip pressure. Size overall: 30¼ x 22 in. Basin: 16 x 12 in. See the Crane *Criterion* lavatory at your Crane Branch or Crane Wholesaler. For sale by Crane Dealers.

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THE RECORD REPORTS

CANADA

(*Continued from page 270*)

the nails used. Canadian manufacturers supplied the bulk of them.

Domestic production has been on a fairly even keel. Latest Dominion Bureau of Statistics figures, for the first 10 months of 1950, show the amount of steel consumed in manufacturing nails to be about the same as for the corresponding period in 1949 — 72,000 tons. Near-capacity volume will be maintained in 1951, though a sizable share of it will be directed to defense construction.

Considerably more nails might be produced were it not for the steel shortage. Manufacturers, rationed by suppliers, sell to only two types of customer — industrialists who buy in carload lots, and wholesalers and jobbers serving the hardware trade. The second group get by far the lion's share and are on quota — getting a percentage portion of their past purchases. If the manufacturer's steel allotment is changed, the quantity of nails the jobber gets is increased or decreased accordingly.

In turn, the jobbers ration the retailers. Most hardware stores reserve a certain number of kegs for steady customers, then put the rest on the counter.

While it is impossible for nail manufacturers to police distribution of all the nails they make, they are on guard against possible black market operations. Assistance is provided by the National Home Builders Association, whose members are urged to report outlets offering Canadian trademarked nails at more than regular price. The manufacturer involved will then draw the case to the attention of any jobber supplying the outlet. If the jobber fails to act, he may find his own source of nails cut off.

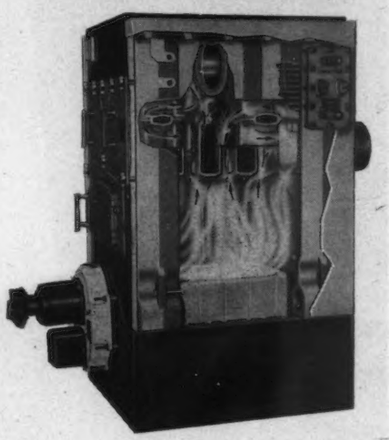
Civil Defense Group Set Up By Building Code Committee

A special technical subcommittee to consider measures which might be taken to strengthen existing buildings against bomb attacks, and to formulate regulations for new construction to give increased protection against the same hazard, has been set up by the Associate

(*Continued on page 274*)

EXTRA

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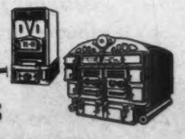


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The new H. B. Smith "2000" boiler-burner unit with its over-size five gallon a minute heater is not only the finest boiler available for heating the larger home, but easily handles the hot water load for two or more baths, dishwasher, automatic clothes washer and other appliances. For that good house job that must be right, specify the H. B. Smith "2000"!

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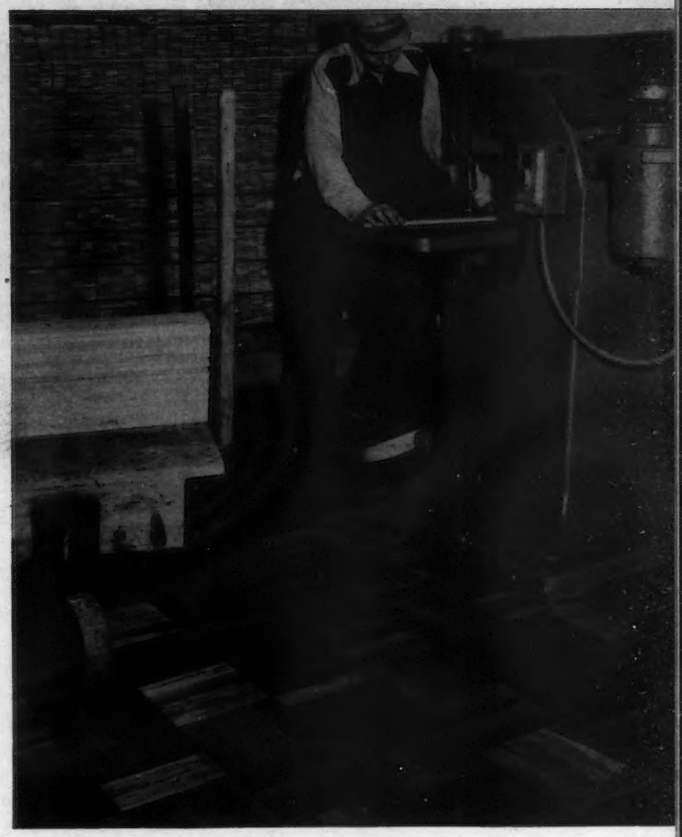
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Prefabricated blocks are laid in mastic over concrete slab. No finishing is needed, as the Toxik treatment is preservative and protective. For added beauty, floor can be given a light sanding and penetrating seal finish after installation.

Less tool damage →

Plant engineers report far less damage to tools and machined parts when accidentally dropped on wood floors than on concrete or other hard surfaced floors. This is often a sizeable expense item. There's less wear and tear on power trucks and other rolling equipment, too.



Less fatiguing

Workers find these hardwood floors far more comfortable underfoot—much less fatiguing than unyielding, hard-surface floors. They are warmer in winter . . . more healthful and fewer colds.

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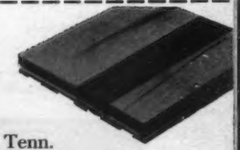
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THE RECORD REPORTS

CANADA

(*Continued from page 272*)

Committee on the National Building Code of the National Research Council.

Chairman E. A. Gardner, assistant chief architect of the Department of Public Works, Ottawa, announced that the regulations may be issued as a supplement to the National Building Code or, if such action seems feasible, be incorporated in the code itself.

Transportation Costs Speed Concrete Industry Expansion

The concrete products industry has undergone an enormous expansion process in the last 10 years, President A. D. Wylie told members of the National Concrete Products Association at their recent national convention in Hamilton, Ont.

Production of concrete masonry products has multiplied upwards of 50-fold since the early 1940's, said W. C. Coupland, Association vice president. Gross value was estimated at $70 million in 1950, compared with $3 million in 1939.

"The large number of new firms is due mainly to the high cost of transporting concrete products," Mr. Coupland explained. "Most firms sell one third of their production within a 30-mile radius, another third within 50 miles, and 100 miles is generally regarded as the maximum within which they can compete."

Last year, one in three of new single-family dwellings erected was almost wholly of concrete block wall construction, and about two in three made extensive use of some form of concrete masonry. Manufacture of concrete blocks and kindred products are expected to establish new records of production in 1951. Introduction of smaller, stronger blocks made by new machines will accelerate output. Expansion of existing plants also will help to boost volume.

Hospital Beds in Ontario Are 18 Per Cent Over '47

New construction has resulted in a three-year boost of 18 per cent in the number of Ontario's hospital beds.

By the end of 1950 there were 19,300 beds in all public hospitals. This is nearly 3000 more than the total of 16,000 beds in 1947, when the federal-provincial grant-in-aid program began.

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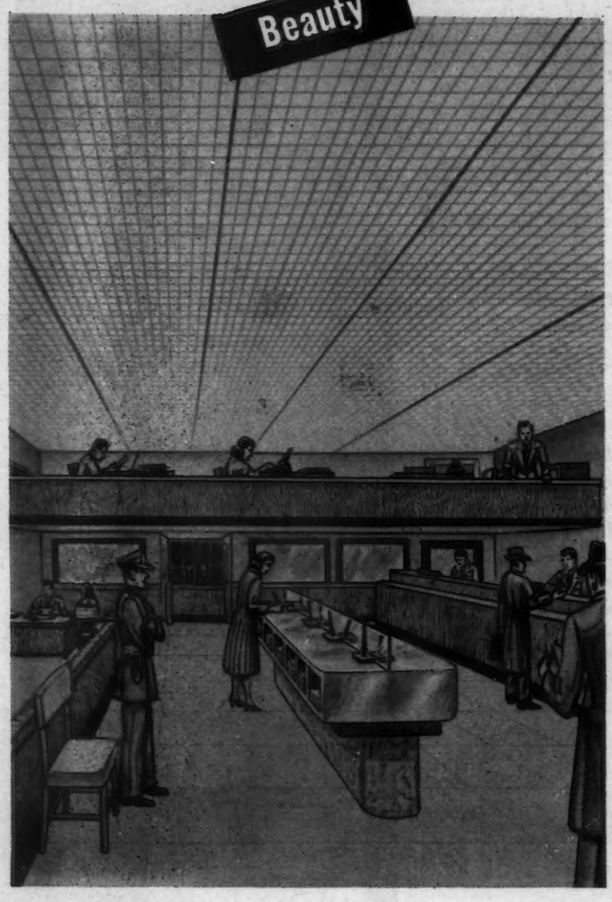
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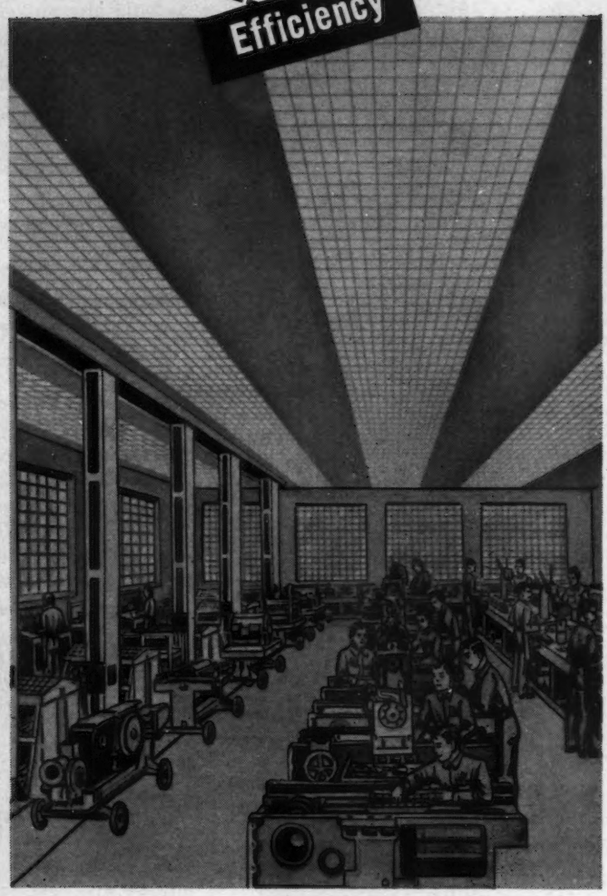
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Plus

New simplified spot lamp tables for computing light intensities in show windows and all highlighted areas.

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See our catalogue in Sweet's Architectural File for 1951, Sec. $\frac{31a}{Ne}$



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Manufacturing Licensee for Wing Unit Heaters in Western Europe — ETABLISSEMENTS WANSON
Haren-Nord, Brussels, Belgium

Wing

Revolving UNIT HEATERS

REQUIRED READING

(*Continued from page 36*)

Charles F. McKim — The Man. By *Frederick P. Hill. Marshall Jones Co., Francestown, N. H.* — Biographical monograph and intimate glimpses of McKim at work.

House & Garden's Book of Building. Condé Nast Publications, Inc., New York — Training course of practical data to help the layman in building or remodeling; 575 building ideas, 40 houses and plans, 20 building articles.

Housing and Town and Country Planning. Bulletin No. 4. Department of Social Affairs, United Nations. Columbia University Press, New York — Report on international programs and techniques in Planning.

Cooperative Housing. Office of the Administrator, HHFA, Washington, D. C. — Housing managed or built cooperatively in the U. S., Scandinavia, England, France, Switzerland and Holland.

Handbook of Human Engineering Data for Design Engineers. Tufts College Institute for Applied Experimental Psychology, Medford, Mass. — Handbook intended especially for design engineers and others concerned with the interaction between men and machines.

Report Preparation. By *Kerekes & Winfrey. Iowa State College, Ames, Iowa* — Types of technical reports, including oral and written, and methods of presentation.

The Behaviour of Engineering Metals. By *H. W. Gillett. John Wiley & Sons, New York* — Designed to assist non-metallurgists who deal with the selection of metals and alloys for engineering use.

Welded Deck Highway Bridges. Edited by James G. Clark. The James F. Lincoln Arc Welding Foundation, Cleveland — Information for structural engineers from the "Welded Bridges of the Future, 1949 Award Program."

Standards — Spearhead of Industrial Mobilization. American Standards Assoc., Inc., New York — Collection of papers presented at the First National Standardization Conference for the purpose of examining the role of standards in a shifting economy.

► catalog design progress

by K. Lonberg-Holm and Ladislav Sutnar



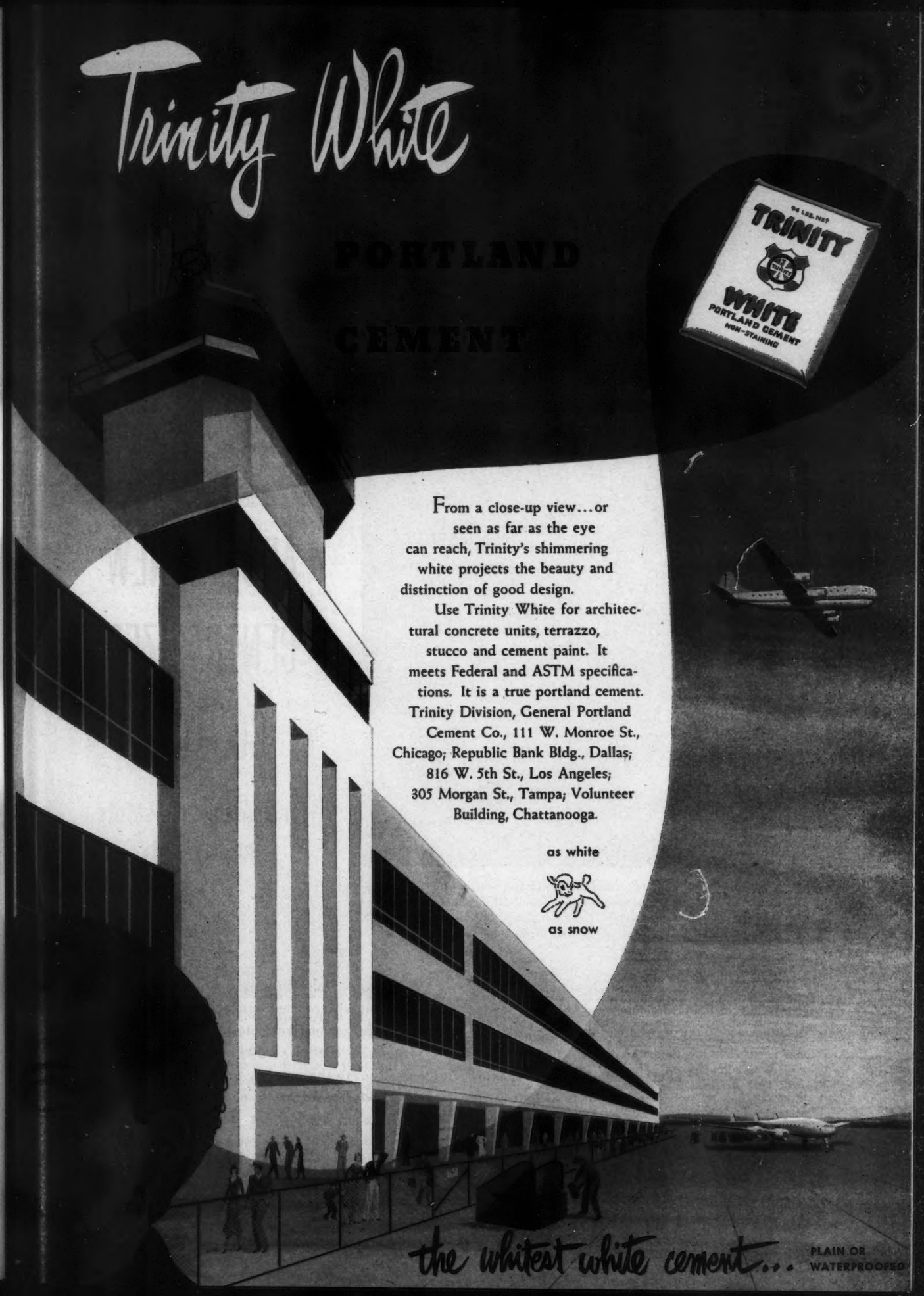
A design study which combines the logic of an analytical approach with the most advanced techniques of visualization. As its title implies, it examines the advances of contemporary standards of product information design over those of the past. Not a book of theories, it clarifies fundamental and tested design principles by applying them in the examples shown. While the book is therefore a practical aid to those engaged in information design, it is also of value to anyone involved with design in our time: architects, product designers, teachers, students. A large book (9¼" x 12") beautifully printed on 100 lb. dull coated paper, with plastic mechanical binding, stiff covers, 106 pages, four colors, most pages illustrated. Published by Sweet's Catalog Service. $10.00

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U. N. BUILDING ADOPTS NEW CENTRALIZED CONTROL

for convenience, safety and flexibility

AIR CONDITIONING and miscellaneous motor controls in U.N. Secretariat Building are operated through this Trumbull CENTR-A-POWER Control Center. The control center is fed from the Trumbull FLEX-A-POWER LVD busway distribution system running throughout the building.

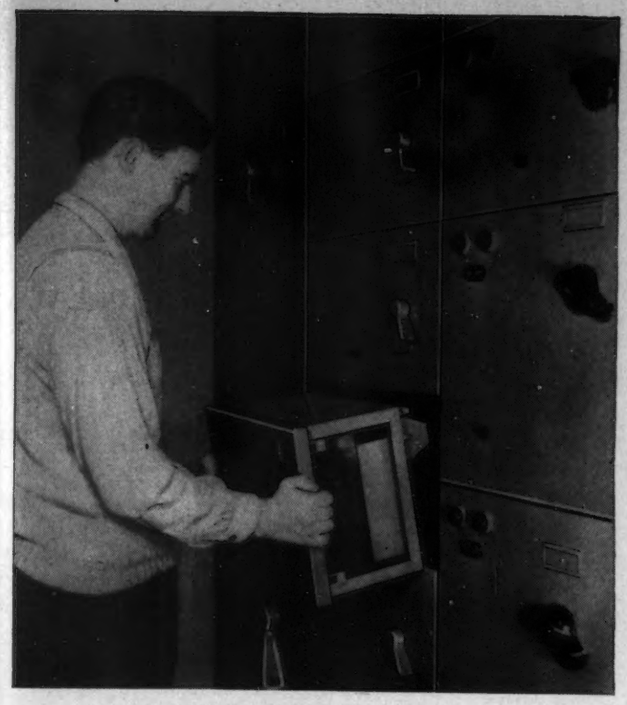
Centralizing all motor controls in one compact, flexible arrangement of front-connected troughs is an idea that appealed to the designers of the United Nations' new permanent headquarters.

Today, operators of the building's equipment enjoy the convenience, convertibility, safety and attractive appearance of Trumbull's new CENTR-A-POWER Control Centers.

Standardized starter-and-disconnect units are grouped in pre-fabricated, rigid steel troughs, in any arrangement. Any number of troughs can be set up in a variety of formations: back-to-back, "U," "L," etc. The control units, called CENTR-A-PLUGS, which are plugged into silver-plated vertical bus bars, are interchangeable from one trough to another.

Trumbull's CENTR-A-POWER control center is a companion to the recently-announced CENTR-A-POWER switchboard, and is another in the series of new Trumbull developments for greater economy, safety and efficiency in electrical control and distribution.

Write for CENTR-A-POWER Bulletins to THE TRUMBULL ELECTRIC MANUFACTURING COMPANY, Plainville, Conn.



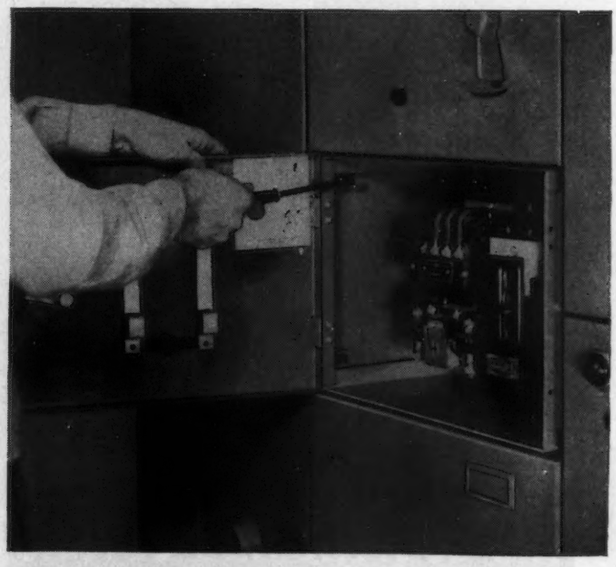
LOW-COST INSTALLATION results from standardization of components. From the complete selection of troughs and control units, the exact combination can be made up to meet any requirements. Floor space is saved by the compact all-front-wired trough design. Yet the ample gutter saves time by giving easy access to wiring.



EASY TROUGH ADDITION recommends CENTR-A-POWER Control Centers for applications where needs may change from time to time. Arrangements of both troughs and controls can be easily altered or added to, and even bus capacity can be increased as conditions require without change in insulators or steelwork.



SIDE-VENTILATED CENTR-A-PLUG is stabbed in from front. Each unit contains a starter-and-disconnect unit, which may be either Trumbull's new HCI high-capacity interrupter safety switch or a Trumbull AT circuit breaker. Ventilated side construction, together with trough vents top and bottom, keep controls uniformly cool.



SAFE, EASY SERVICING is provided by the interlock which requires the disconnect handle of the deadfront CENTR-A-PLUG to be moved to OFF position before it can be opened . . . and by the quick-clip method of attaching the control unit to the trough which eliminates the nuisance of screws, nuts, and loose parts.

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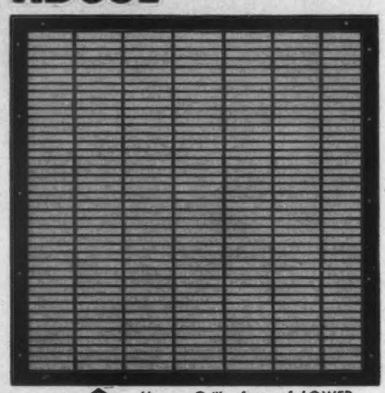
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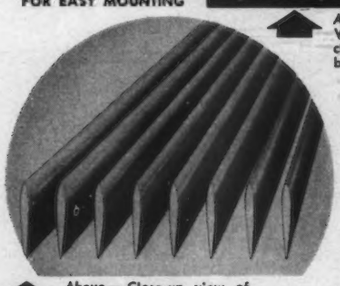
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Above—Grille face of LOWER WALL INDUSTRIAL GRILLE. Note close spacing of extra-strength blades (⅜" centers).



Above— Close-up view of volume control section. Note famous solid section AIRFOIL LOUVERS. Each blade is individually adjustable. CONCEALED LOUVER SUPPORT eliminates mullions and butted construction.



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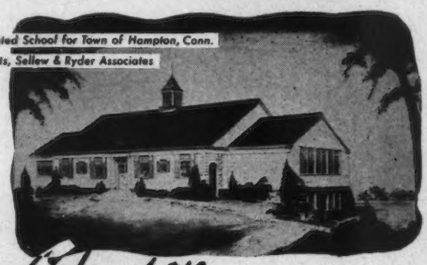
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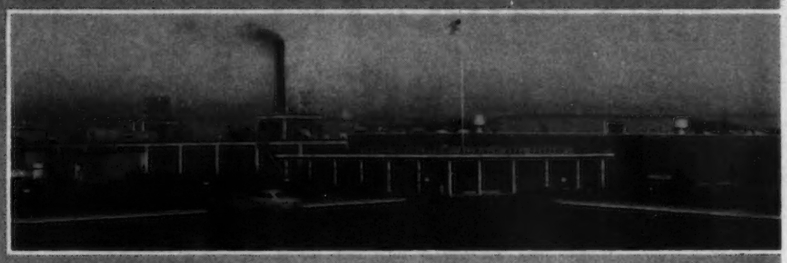




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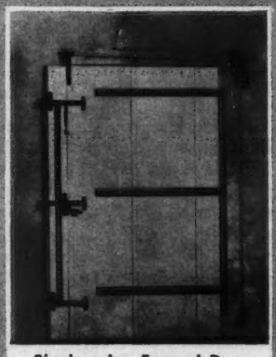
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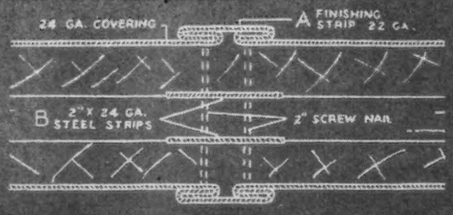
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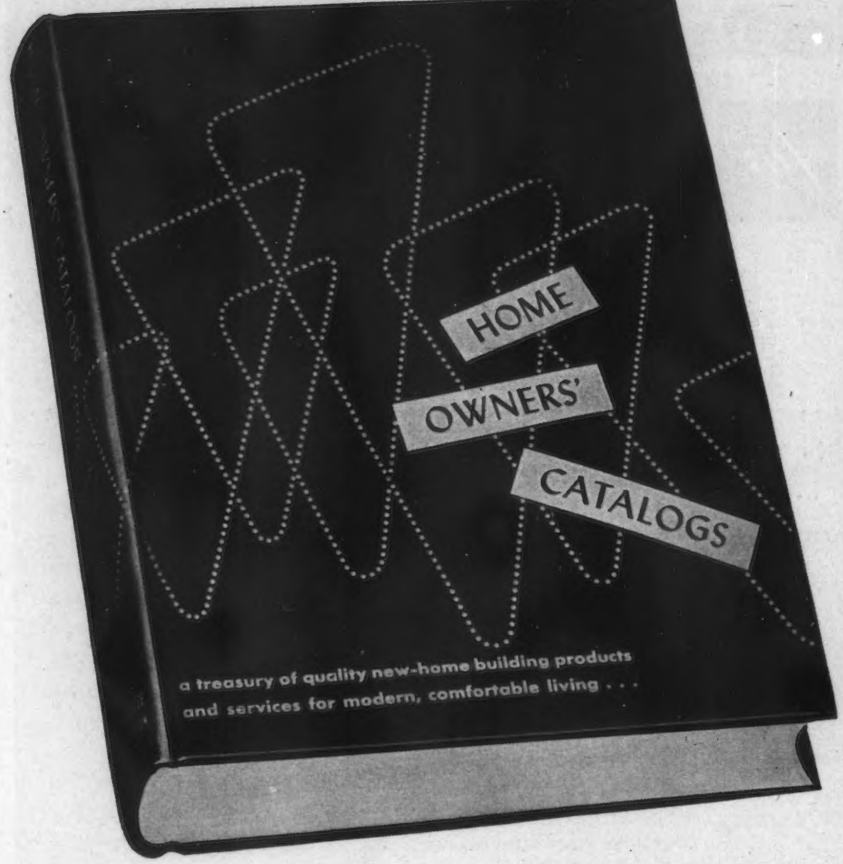
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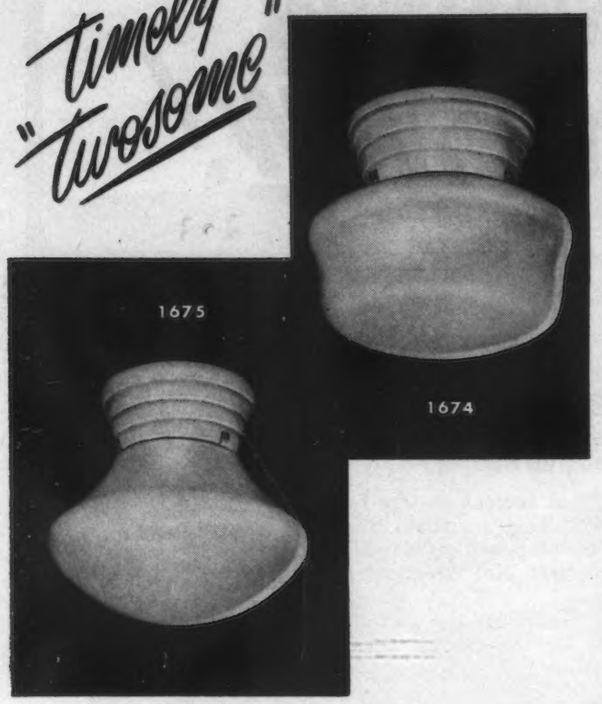
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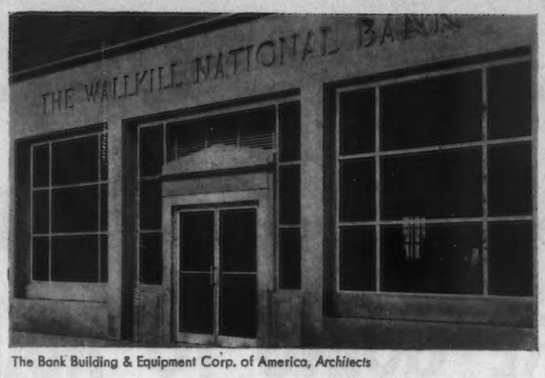
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Both #1674 and #1675 are furnished with glass. Each is completely wired and equipped with a mounting strap for 3¼" and 4" outlet boxes. Both have base diameters of 6⅛" with a 4" fitter. However, #1674 is keyless and is rated @ 660W-250V. #1675 has a Pull Chain and is rated @ 250W-250V. Both are approved by Underwriters' Laboratories.

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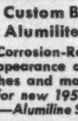
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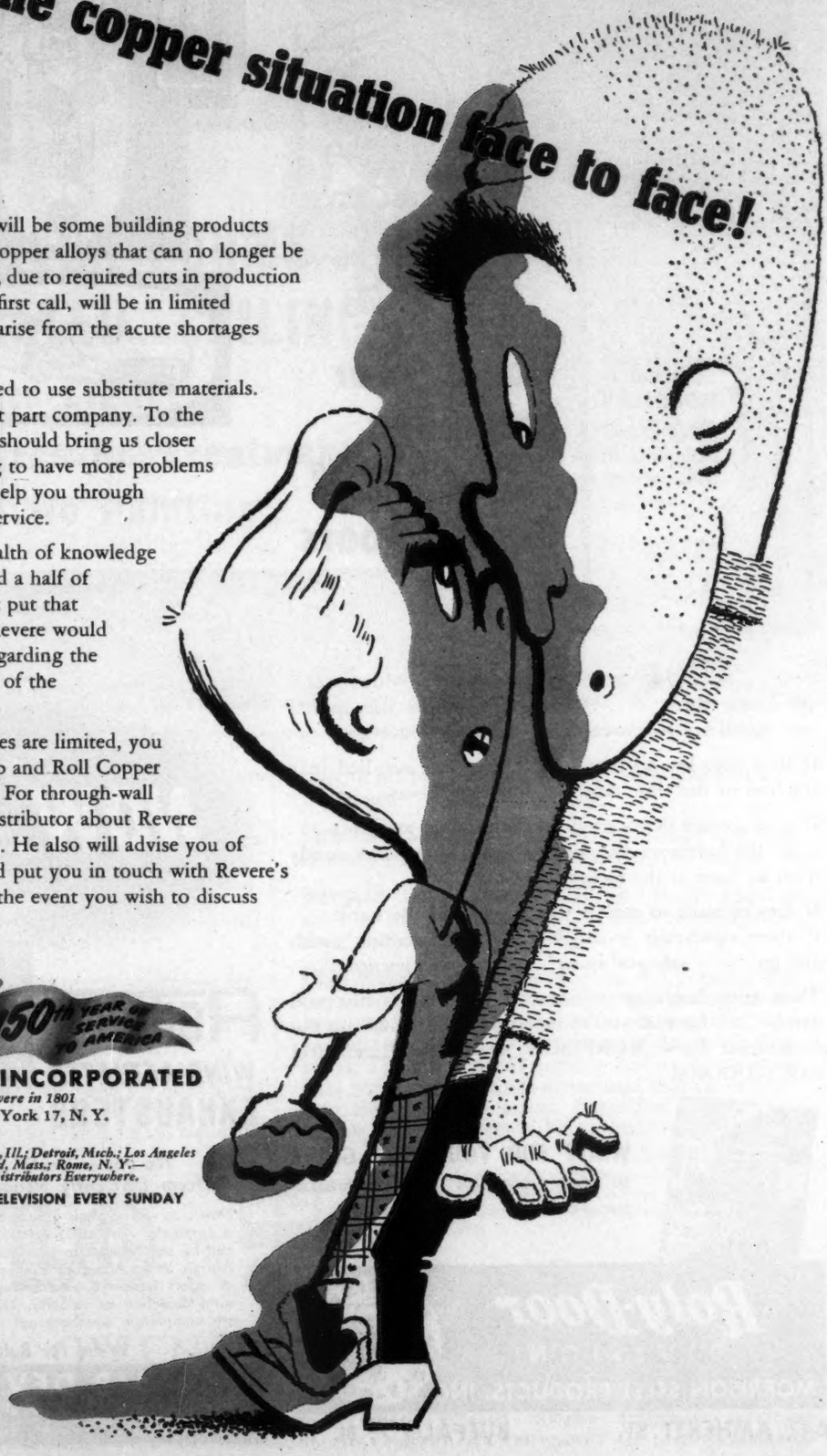
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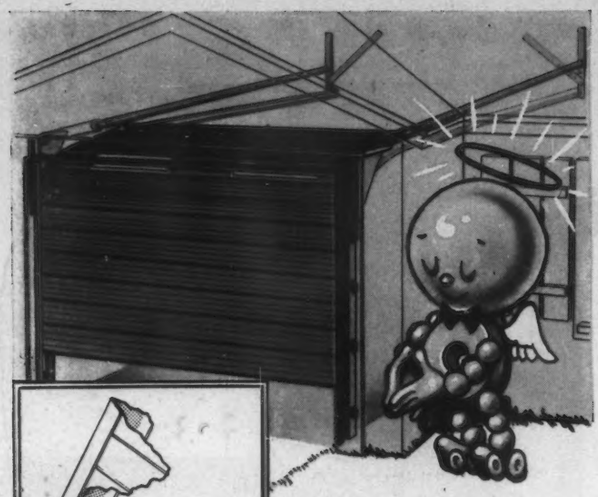
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Write for Bulletin EX 103-2

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See our CATALOG in SWEET'S FILE

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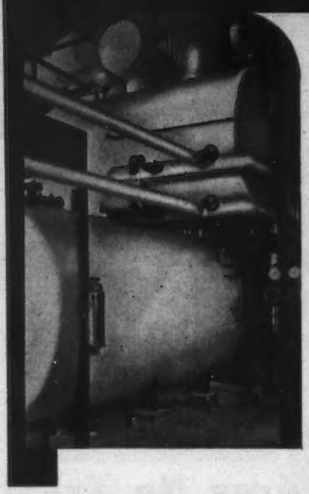
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SEE OUR CATALOG IN SWEET'S



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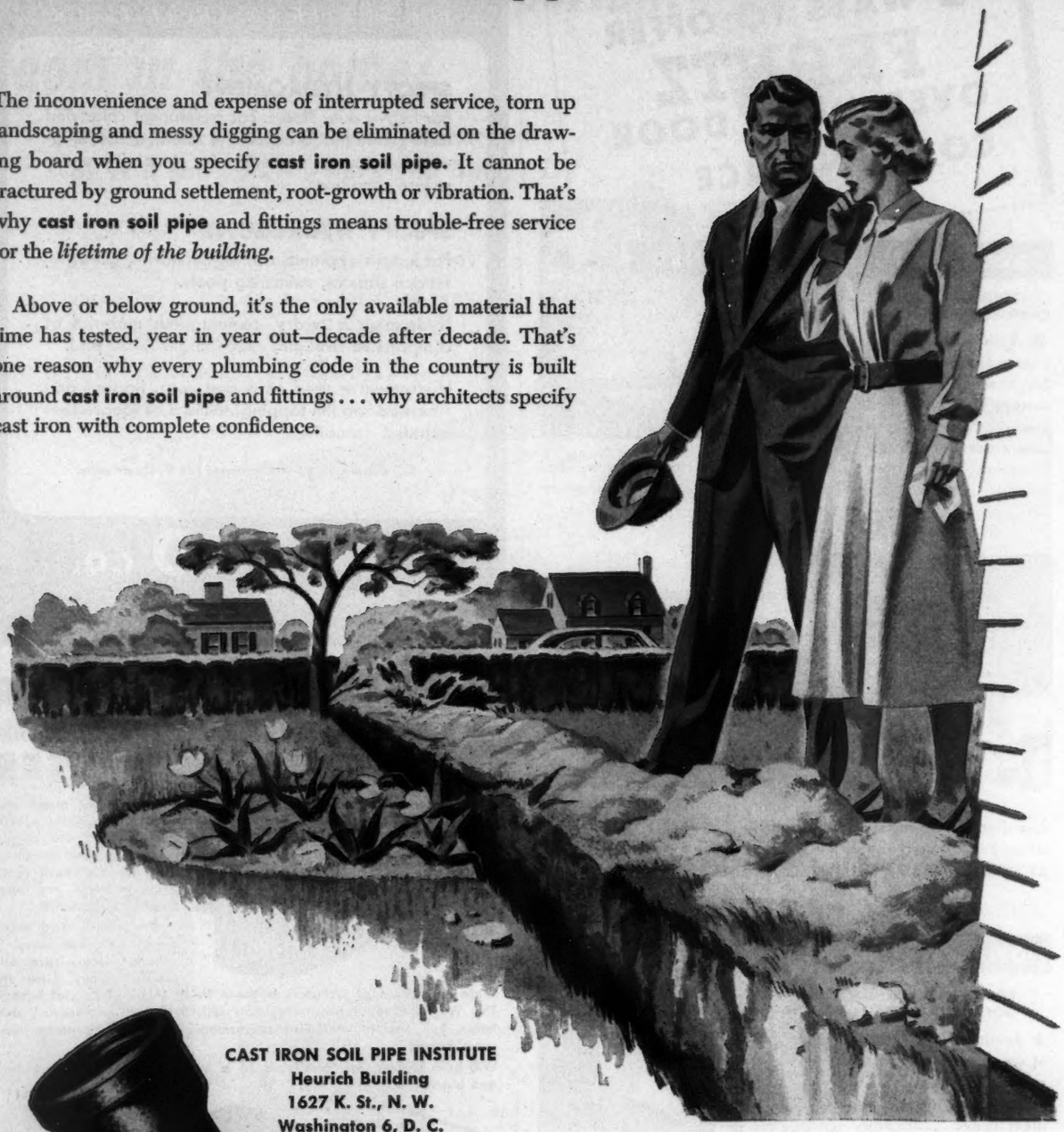
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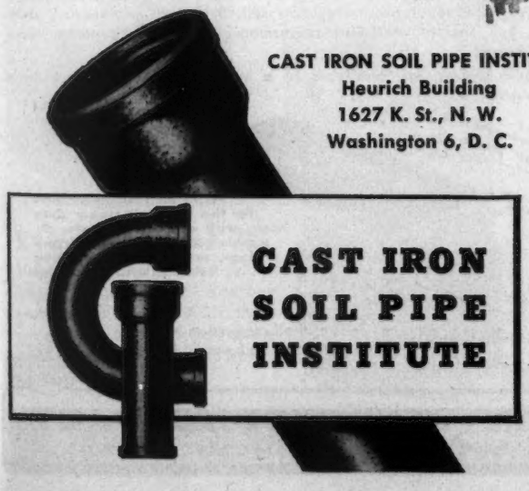
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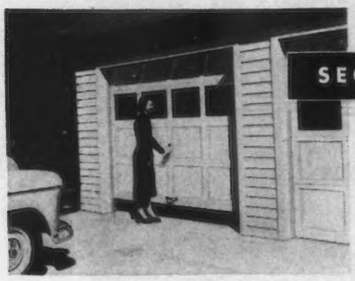
3 WAYS TO OFFER FRANTZ OVER-HEAD DOOR CONVENIENCE



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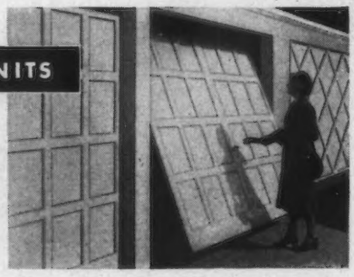
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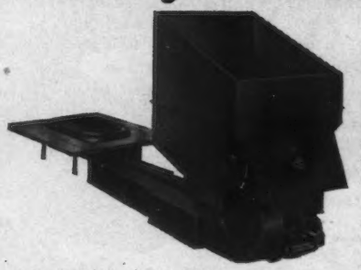
See Sweet's 1951 Architectural file 9/Up or write

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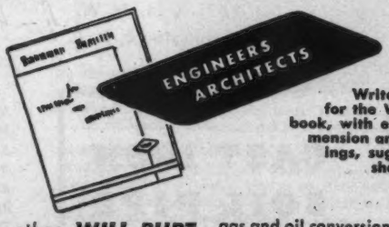
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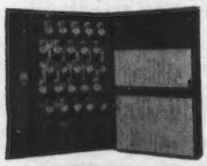
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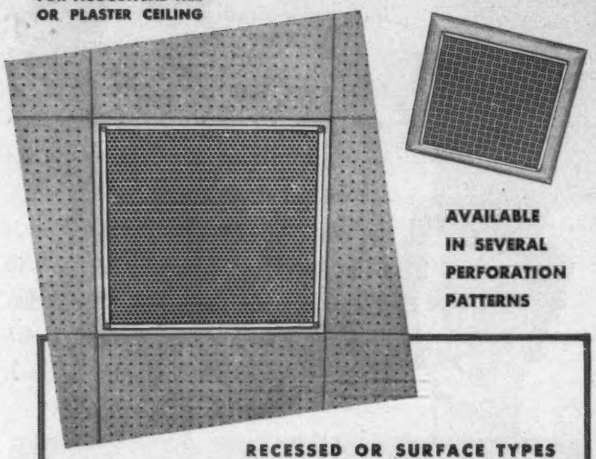
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FOR ACOUSTICAL TILE OR PLASTER CEILING



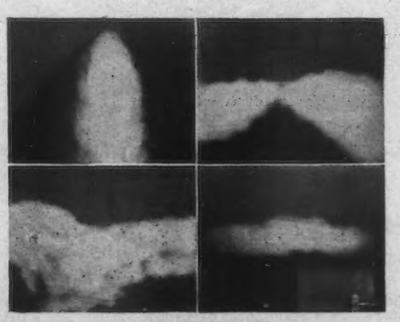
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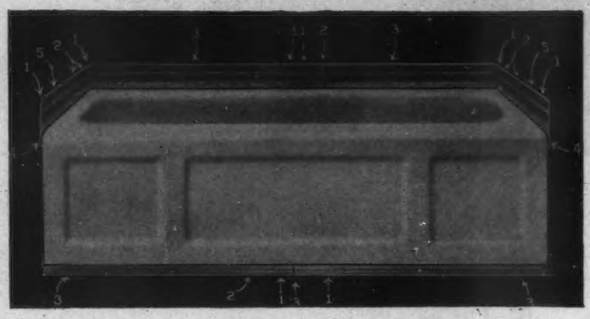
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THE LUCKE LEAK PROOF TUB HANGER



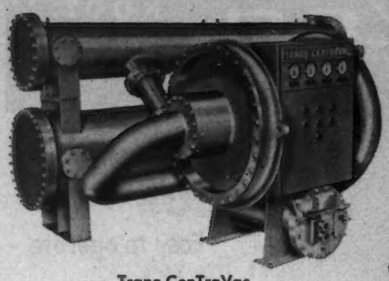
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..Churches..Schools
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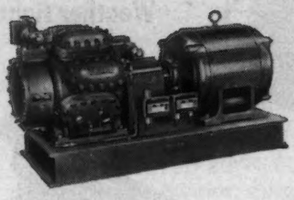
The West Dodd System of Lightning Protection is inconspicuous. Leaves nothing to mar the architectural beauty of any building. When installed by factory trained experts it provides almost 100% protection from lightning. West Dodd Systems are manufactured in accordance with Underwriters' Laboratories and American Institute of Electrical Engineers standards.

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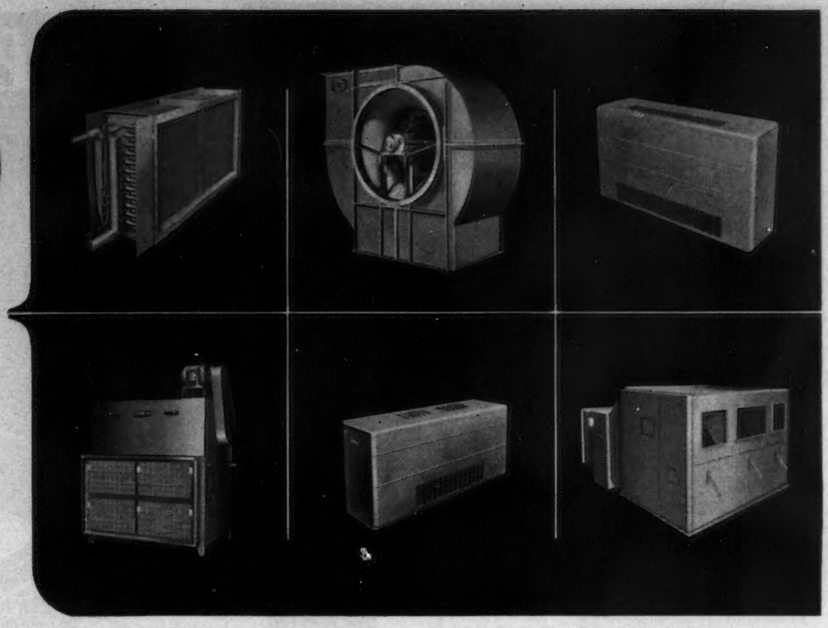
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Goshen, Indiana



Trane CenTraVac



Trane Reciprocating Compressor



Trane Cooling Coil (above) Trane Climate Changer

Trane Centrifugal Fan (above) Trane Custom Air Unit

UniTrane Air Conditioner (above) Trane Multi-Zone Climate Changer

How matched Trane Products make better systems

Here's why more and more people are specifying, installing and using more and more Trane matched products each year.

Specifiers know that Trane manufactures everything from hot water valves to refrigeration units. Using Trane equipment, they can create a wide variety of complete systems for every type of building. They combine Trane Evaporative Condensers with Trane Reciprocating Compressors, Trane Fans with Trane Cooling or Heating Coils, Trane Unit Ventilators with Trane Steam Specialties.

And when they use Trane equipment together, they are not only getting the fine features that have established individual Trane products as leaders in their respective fields but a lot more as well.

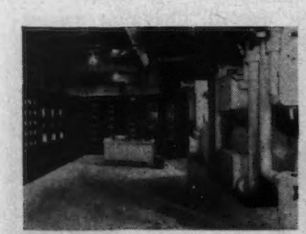
Save Time—If they need equipment counsel they see one salesman-engineer instead of several. They use one set of completely integrated catalogs conveniently bound into one handy binder.

Save Trouble—When they use Trane equipment to create a system, Trane assumes the responsibility for the correct performance of all its equipment when properly installed and controlled. There is no blaming the product of one manufacturer because the product of another doesn't operate satisfactorily.

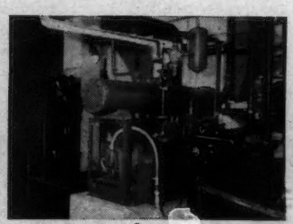
Better Performance, Too—Trane products are designed together, made together, tested together for service together. Each product is built to the same high level of quality. Into each product, Trane has incorporated important construction features that make that product a leader in its field. When these leading products are used together in a system, better performance is inevitable.

Add to all these specific advantages those that the installer enjoys. He orders equipment directly from one supplier. He can plan shipment of equipment more easily. He writes one check for the whole system. Bookkeeping is cut to the bone. So is installation because Trane products fit better together.

When Trane products are used together in complete systems the user gets a better installation. Join those who have already found the advantages of complete Trane systems—specify and install Trane products.



Equipment room of a large office building where Trane centrifugal refrigerating units supply chilled water in an extensive Trane air conditioning system.



This Trane Condensing Unit is perfectly matched with Trane Direct Expansion Coils to form the heart of a Trane system for the coffee shop of a large hotel.



Real Trane product teamwork is illustrated by this complete Trane Compressor, Trane Evaporative Condenser and Trane Climate Changer installation.

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MANUFACTURING ENGINEERS OF HEATING, VENTILATING AND AIR CONDITIONING EQUIPMENT

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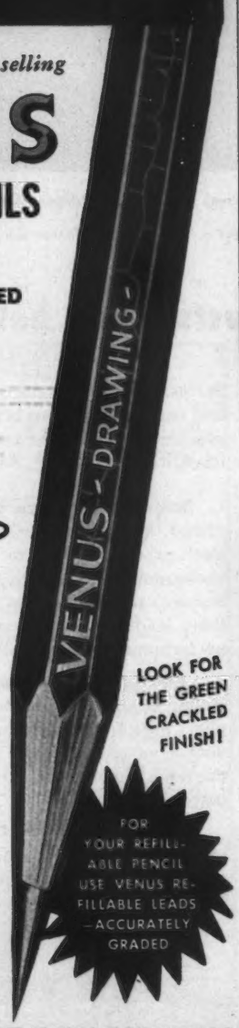
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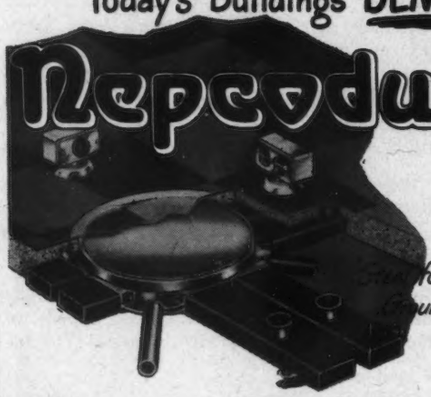
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Why be content with outdated wiring systems when it is so easy and economical to install NEPCODUCT? NEPCODUCT is an all-steel underfloor electrical distribution system providing electrical outlets *at the floor surface . . . wherever* needed . . . *whenever* needed. Changing tenants can rearrange interior wall partitions to meet their needs, assured that NEPCODUCT will provide adequate electrical and communication service.



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METHOD OF PROTECTING BUILDINGS FROM THE WEATHER

For all types of MASONRY, STUCCO and PLASTER



The meaning of "I.P.C" is *integrally protected concrete*—when you use Nova-I.P.C Admix. If directions are carefully followed, you will be *safe* whether you are using mass concrete—above or below grade; cement plaster coats—interior or exterior; stucco; mortar between brick, stone or blocks; slush coats on cinder blocks or other porous surfaces; cement grout; gypsum plaster. This unique product speeds up the work and lowers the cost, produces harder and denser concrete, reduces shrinkage, aids in curing mass concrete.





"I.P.C" means *integrally protected coating*—when you use Nova-I.P.C Masonry Paint. The protection is inherent in the coating, because the base of the paint is Nova-I.P.C Admix . . . Use this paint for any porous masonry surface—specifically for brick, stucco, cinder block, concrete block, concrete or stone. Properly applied, your building is safe from weather and may be cleaned with a garden hose. Unlike other masonry paints, Nova-I.P.C may be applied when there is fog and dampness in the air. Six pastel shades and snowy white are available.

Nova-I.P.C Transparent Filler tightens up porous mortar joints and masonry by penetrating to a depth of 1½″ or more—builds up a seal *within* the surface and gives complete protection from the weather. Contains no petroleum, wax or paraffin to cause discoloration. Protects large buildings from getting dirty.





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SLABS ON GRADE—Use Nova-I.P.C Admix in slab and eliminate membrane and washed gravel. Only bank run sand and gravel needed. Slab can be finished faster and will not dust—with a big saving.

Write today for full details of specifications, applications and list of famous installations. *Kindly include the name of your lumber dealer.* All three products are long established and fully proved.

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A wholly owned subsidiary of the Homasote Company, manufacturers of the oldest and strongest insulating-building board, Wood-textured and Striated panels.

HAR-VEY ROLLING DOOR HARDWARE



Tops IN THE NATION for Winning Performance

"The proof of Har-Vey's superior performance lies in the fact that architects, builders and mills are using it over and over again," says Clyde Varney, Hardware Jobber of Detroit, Michigan.

"Their complete satisfaction with the ease of installation and smooth, trouble-free operation is in turn winning more and more new users for Har-Vey Hardware wherever rolling doors are being installed."

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★ **Quick, easy installation** ★ **Positive Locking**
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Need power for isolated construction jobs? Load a Fairbanks-Morse generating set onto your truck! You'll have plenty of power for operating tools, hoists, compressors and other needs.

There is a generator of the size you need in the Fairbanks-Morse line, which ranges from 600 to 35,000 watts capacity—A.C., D.C. or A.C.-D.C.

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Hint of things to Come?

Who knows what the future will call on you to build? Windowless, air conditioned structures above ground —or *below* ground?

Either way, the techniques York has developed in air conditioning windowless buildings—from the world's first to the world's newest—are freely available to you.

IF WAR SPREADS

You'll also be using air conditioning more and more as a vital production tool. Here again York, headquarters for mechanical cooling since 1885, can save you research and detail—with knowledge gained through years of solving temperature and humidity problems for practically every kind of industry you can name.

IF PEACE PREVAILS

Venture capital will increasingly insist on air conditioning in housing, office and factory construction *and modernization.*

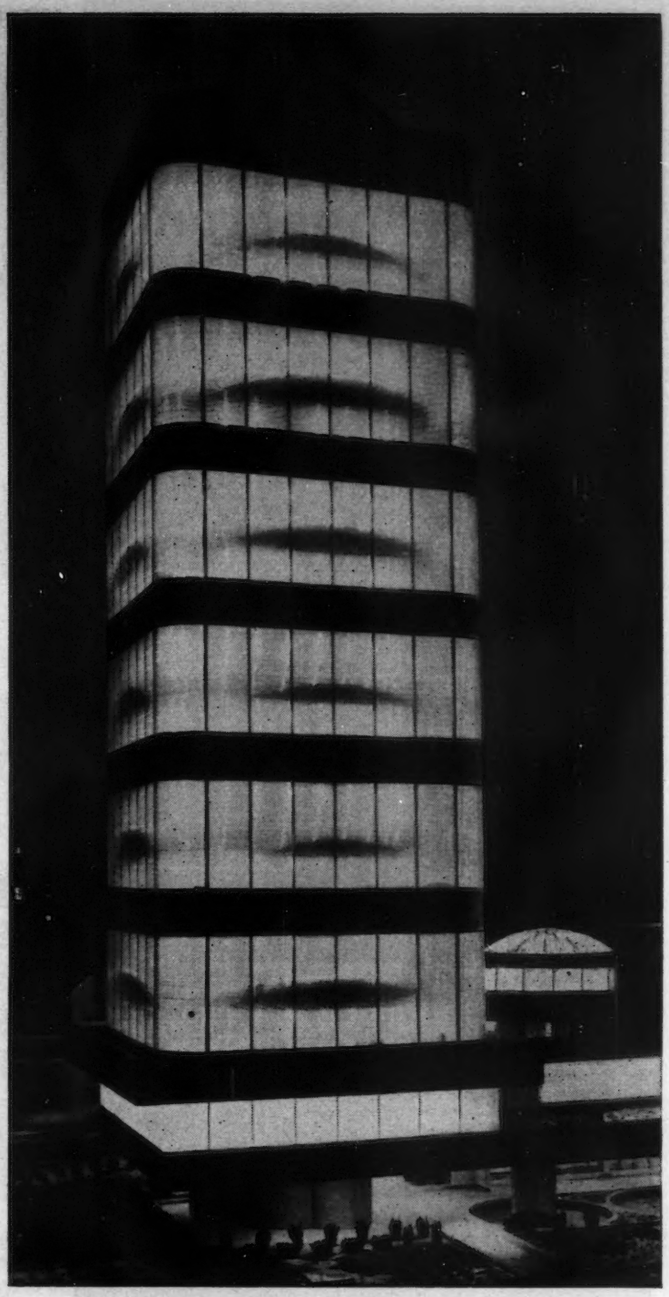
Again you can draw from York's tremendous backlog of experience with the tricky jobs of cooling existing giants like the Empire State Building, Rockefeller Center's Esso Building, F. W. Woolworth headquarters . . . and with the big jobs of weather planning for new projects like Philadelphia's Rittenhouse Apartments, tallest of air conditioned dwellings.

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Use the lessons we've learned: our nationwide network of trained specialists can help you cut tedious, costly planning and detailing from your work. It's York's policy to channel contract air conditioning through the Architect, Engineer or Contractor. And York relieves you of post-installation responsibility with an exclusive

CERTIFIED MAINTENANCE CONTRACT

that takes all maintenance off your client's shoulders, assures uninterrupted operation for a nominal service fee. Check today with your nearby York Representative or write York Corporation, York, Pennsylvania.



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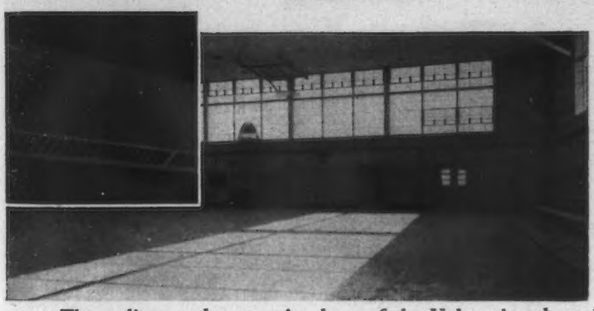
York refrigeration air conditioning

The big advances come from YORK

Headquarters for— **Refrigeration and Air Conditioning**

VULCAN HAS IT!

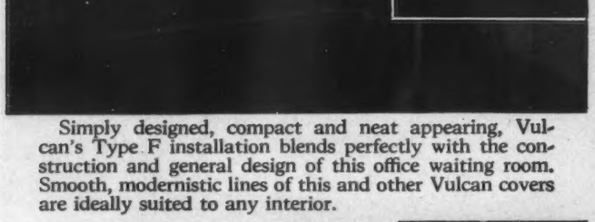
Smooth Heat PLUS Smooth Appearance



The radiant and convection heat of the Vulcan installation shown above, provides the healthful draft-free comfort so important in a building of this type. And as for appearance . . . it's beautifully inconspicuous with Vulcan Type S Linovector* Cover.
** Reg. trade mark*



Simply designed, compact and neat appearing, Vulcan's Type F installation blends perfectly with the construction and general design of this office waiting room. Smooth, modernistic lines of this and other Vulcan covers are ideally suited to any interior.



Here Vulcan is used with custom-made covers to meet the special needs of this school room. Vulcan fin-tube radiation presents the ideal solution to heating problems in all kinds of construction, allowing the architect the utmost freedom in design with the most satisfactory results.



Specify Vulcan, it suits every plan!

Availability of material subject to government regulation

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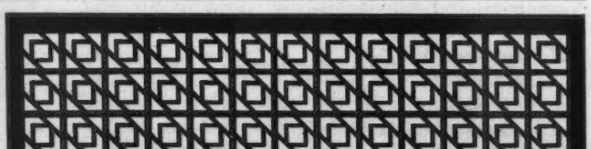
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of Ornamental Grille

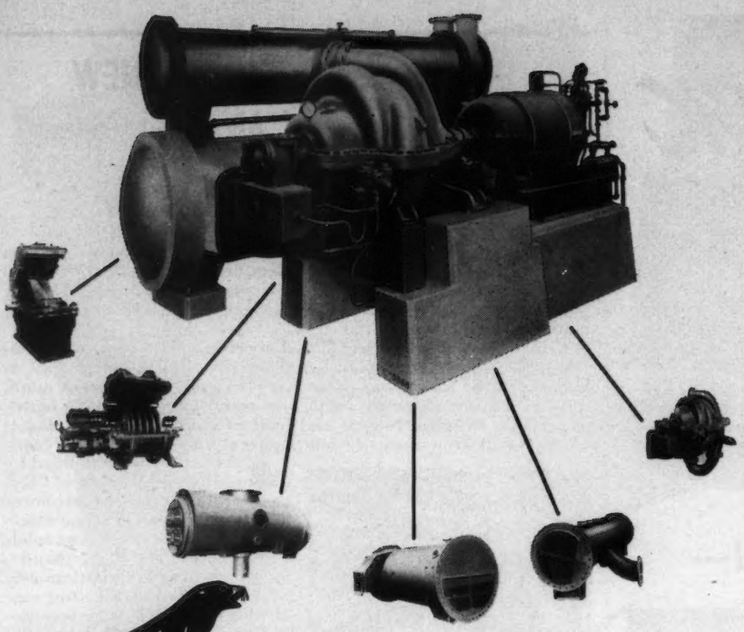
This attractive grille, M No. 7, is obtainable only from Hendrick, as it is one of the exclusive designs Hendrick originated and patented.

Hendrick offers a selection from over a hundred standard grille designs, each available in a wide range of overall dimensions, bar sizes, and number and sizes of perforations. Grilles are entirely free from burrs or other imperfections, and are uniformly flat and easy to install, because of a special Hendrick manufacturing operation. Write for full information.

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Where do you get

UNDIVIDED RESPONSIBILITY

in an installation of centrifugal refrigeration?

Worthington will "wrap up a package".

Unlike other manufacturers of air conditioning and refrigeration equipment, Worthington *makes*—not just assembles—all the major components for each installation.

Compressor, condenser, cooler and such drive equipment as steam turbines, steam condensers, motors, and step-up gears—are all made in Worthington's own plant—each carefully designed for balanced operation with its companion components.

So the builder and owner can place full responsibility on the one supplier—Worthington.

Worthington centrifugal systems are used with most refrigerants and for any process—chilling water, brine, chemicals, lubricating oils—for temperatures as low as minus 160 F, capacities from 150 to 2600 tons.

A typical Worthington compressor feature is the arrangement of the volute passages and impellers to counterbalance the radial and axial thrusts, respectively, in the various stages.

Write for Bulletin C-1100-B14 on Worthington centrifugal refrigeration.



Worthington room conditioners for both heating and cooling are built to operate with chilled water or direct expansion cooling, capacities from 350 to 600 cfm for under-window installation.

PACKAGE UNITS SELECTED TO COOL HUGE OFFICE BUILDING



This is an excellent example of how Worthington's complete line makes it possible to select exactly right equipment.

The new office building at 488 Madison Avenue, New York—home of many famous magazines and large industrial firms—is air conditioned primarily by package units, assisted by a Freon-12 reciprocating system with chilled water and steam coils.

Purpose of using package units in a big building like this is to provide for a variety of conditions imposed by both the building and the type of tenants: air conditioning needed only on top floors during certain seasons, difference in sun load on various sections, certain tenants working late hours but only with skeleton forces.

Second through 20th floors are handled by 38 Worthington 20 and 25 ton Package Air Conditioners, two per floor. Basement, first floor and top three floors are handled by two Worthington 75-ton Freon-12 compressors complete with condensers, pumps, water coolers and five central station units with chilled water and steam coils. Total capacity is 1050 tons.

Builders and owners: Uris Bros. Consulting engineer: Henry Oehrig. Air conditioning contractor: Raisler Corp. All of New York.

RICE HOTEL MULTIPLIES COMFORT-COOLING WITHOUT REQUIRING MORE ROOM



Last year, Houston's Rice Hotel completed air conditioning its entire building, including a thousand guest rooms, dining rooms and meeting rooms, by installing three Worthington 600-ton centrifugal chilled water systems.

This equipment, utilizing Freon-11, replaced ammonia refrigeration equipment having a capacity of 350 tons, yet occupies no more space than formerly.

Worthington equipment was selected primarily because Worthington could provide 100% equipment of its own make. The compressors are driven by Worthington steam turbines and steam condensers.

Engineer: Reg. F. Taylor. Mechanical Contractor: Charles G. Heyne & Co. Architect: Kenneth Franzheim. All of Houston.

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AIR CONDITIONING AND REFRIGERATION

INVESTIGATE

MORE WORTH WITH WORTHINGTON

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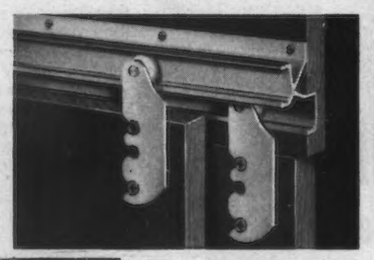
QUALITY SLIDING DOOR HARDWARE

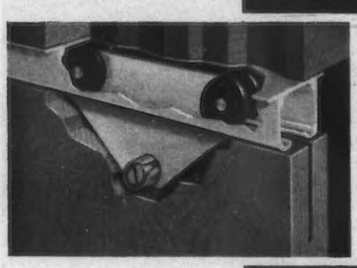


These 4 tracks fill every building need—

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New! Improved! Specifically designed for wardrobes, store fixtures and all types of kitchen and bathroom cabinets. This double rail track is unquestionably the neatest and most practical method of sliding by-passing doors known today.



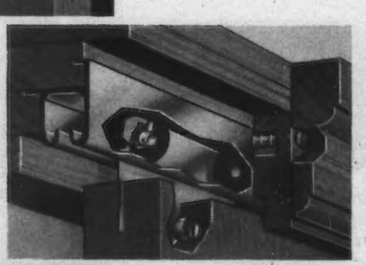


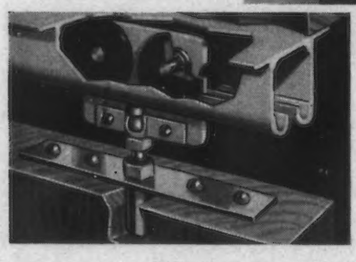
SERIES 300

Features Kennatrack's exclusive expansion plug mounting, which requires less headroom space than any other known overhead sliding door device. Door is carried on not two... not four... BUT EIGHT neoprene-tired wheels.

SERIES 325

Today's trend toward open pocket installation finds Kennatrack Series 325 the perfect answer. It practically duplicates Series 300, except for a flange which simplifies mounting in an open pocket. There are not two... not four... BUT EIGHT neoprene-tired wheels.





SERIES 400

The best engineered door track on the market. Combines proved mechanical features and finest quality materials. Full-floating hangers assure equal load distribution to not two... not four... BUT EIGHT neoprene-tired wheels. For heavy closed pocket doors.

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Specializing exclusively in the Manufacture of Sliding Door Hardware

How You Save with the NEW Niagara Method of Air Conditioning

Using "HYGROL" Absorbent Liquid

Because it absorbs moisture from the air directly, the new Niagara Controlled Humidity Method uses less, or no, mechanical refrigeration for dehumidifying. You save first costs and installing of heavy machinery. You save space, maintenance expense, power; get easier, more convenient operation.

Using "Hygrol" absorbent liquid gives complete control of temperature and relative humidity. Especially, it is a better way to obtain dry air for drying processes, packaging hygroscopic materials, preventing moisture damage to metals, and obtaining better quality for chemical process and food products — or in obtaining better results in comfort air conditioning at lower refrigeration costs.



Food Packaging under Controlled Humidity

Filtered air is dehumidified by passing through a spray of "Hygrol" which removes air-borne moisture. This liquid is non-corrosive; it contains no salts or solids to precipitate and cause maintenance troubles. It is continuously re-concentrated at the same rate at which it absorbs moisture, providing always the full capacity of the air conditioner, automatically.

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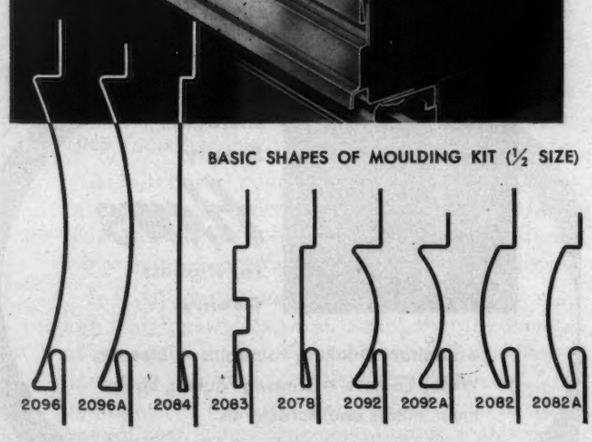
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WITH THE PITTCO PREMIER MOULDING KIT

● By interchanging various basic shapes in the Pittco Premier Moulding Kit, the architect can avail himself of the widest latitude in store front design . . . can give fresh, distinctive beauty to each of several adjacent places of business.

Three of the almost limitless number of designs that can be made from the Pittco Premier Moulding Kit are shown here. Cross sections of some of the basic mouldings are illustrated at the left.

You'll find the Pittco Premier Moulding Kit . . . another product of Pittsburgh's continuing research . . . an invaluable tool in modern store front design.



PITTCO STORE FRONT METAL

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PITTSBURGH PLATE GLASS COMPANY

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to Help Architects WITH FLOOR PROBLEMS

He is a specialist in planning and engineering practical floor treatments. Will show you how cost-saving Hillyard products fit in with ANY architectural plans you have on your drawing board—for schools, hospitals, hotels, factories, offices, churches, stores, airports, gymnasiums, stadiums. No obligation, of course.

Hillyard has located a trained Maintaineer in your vicinity. He's ready to give you practical help, before and during construction.

He's . . . *on your staff but not your payroll.*

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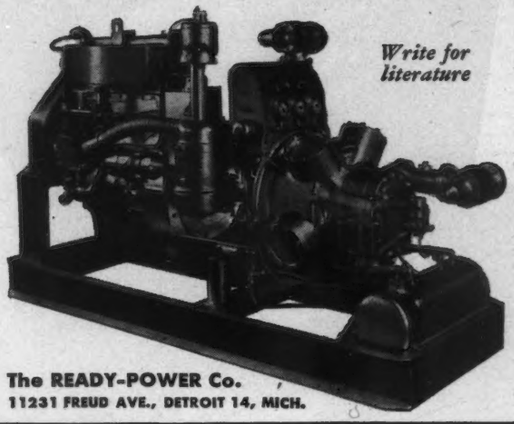
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Ready-Power Engined Refrigeration Units operate at a small fraction of the cost of electrically-driven equipment. Savings of $50 to $150 per month are often realized on single unit installations. Operate on NATURAL GAS, gasoline or Diesel fuel.

AIR CONDITIONERS OPERATE AT LOWEST COST



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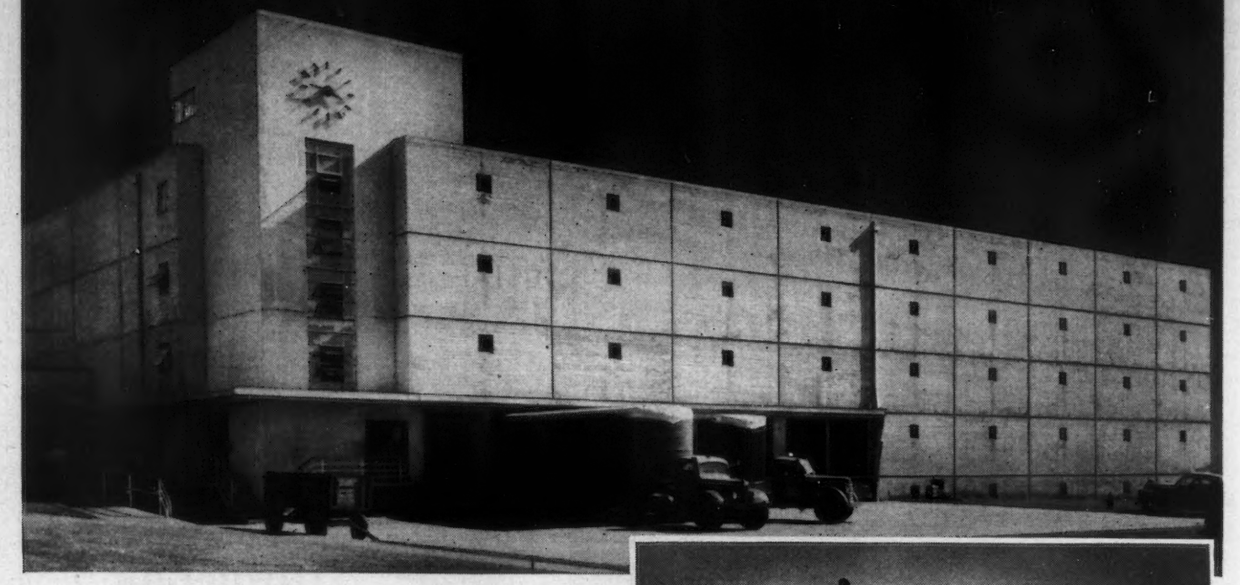
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A reputation for reliability since 1909. Check in Sweet's or write for complete HAWS catalog.

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Agents and Sales Representatives in All Principal Cities

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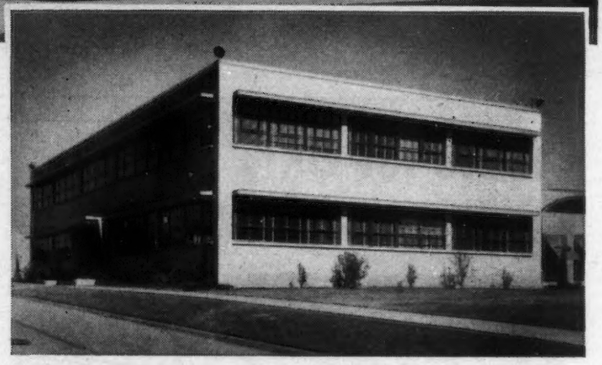
THESE modern buildings are part of the large Armstrong Tire & Rubber Co. plant in Natchez, Miss. They demonstrate the adaptability of architectural concrete to industrial structures.

The warehouse and engineering building (top and bottom photos) are part of the original plant built in 1938-40. Today these buildings are still attractive and new-looking; yet no maintenance has been required. One cement grout coat was applied to the engineering building in 1946 to harmonize with the new office building. So satisfactorily have these buildings performed that all new additions, including a new office building built in 1945 (middle photo), were designed in concrete.

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Large photo above shows rubber storage warehouse of the Armstrong Tire & Rubber Co., Natchez, Miss. Small photo above shows architectural concrete office building. Photo below shows original office building now occupied by the engineering department. James T. Canizaro, Jackson, Miss., architect for the entire project and structural engineer for the office building. Roberts & Schaefer Co., Chicago, was structural engineer for the factory and the engineering building. H. N. Howe, Memphis, was structural engineer for the warehouse. Hillyer & Lovan, Jacksonville, Fla., was contractor for the warehouse and the office building. B. L. Knost, Pass Christian, Miss., was contractor for the factory and the engineering building.

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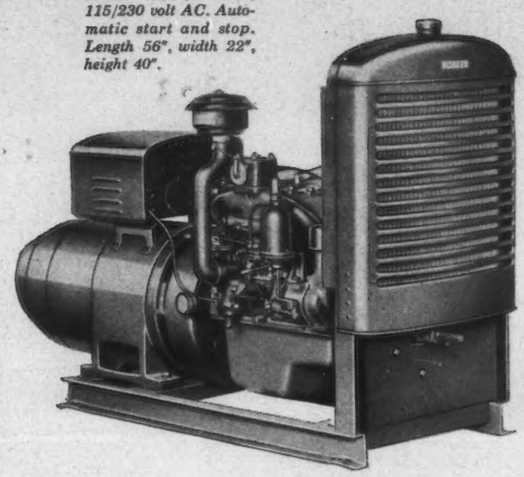
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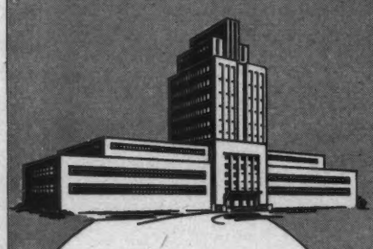
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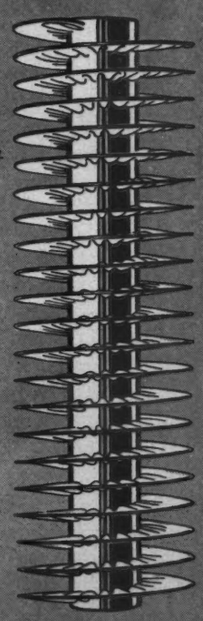
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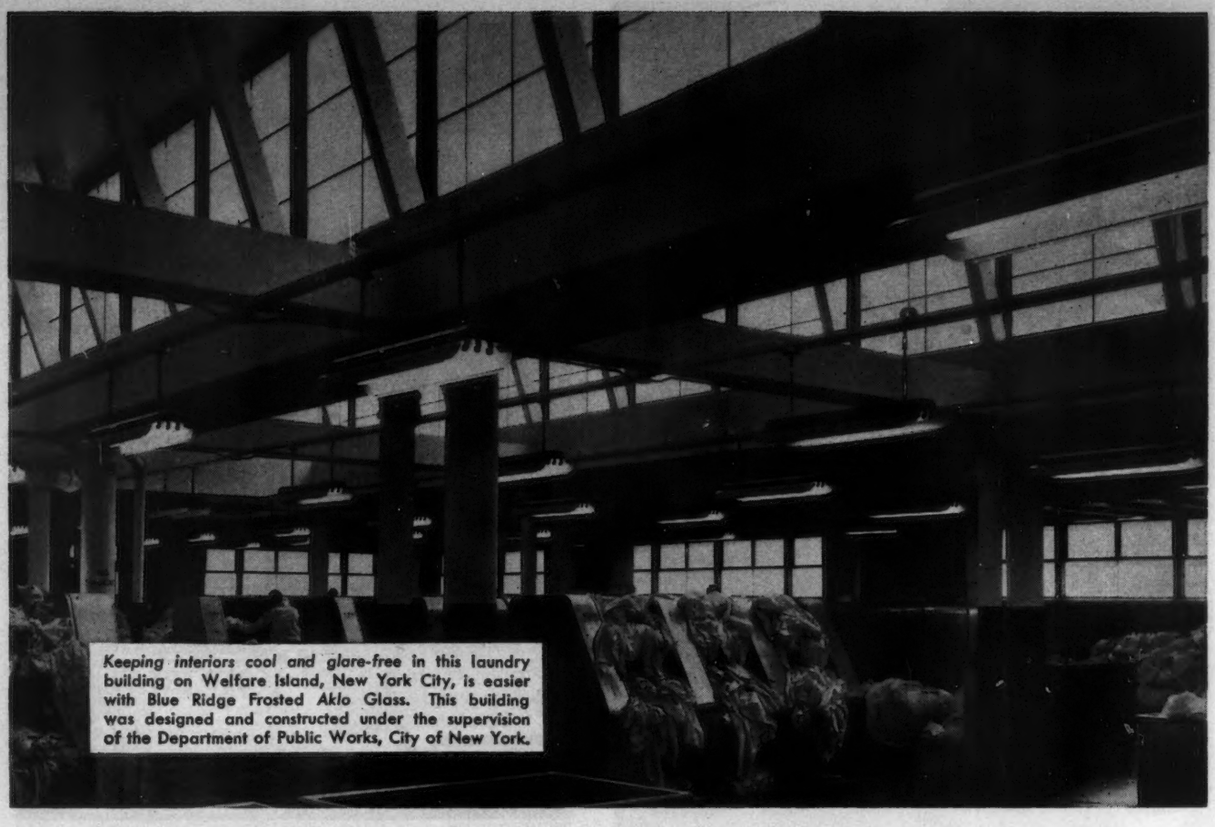


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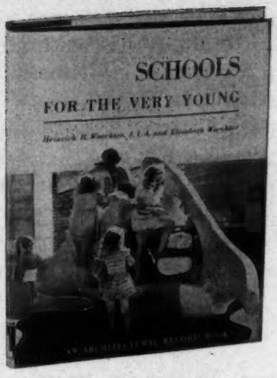
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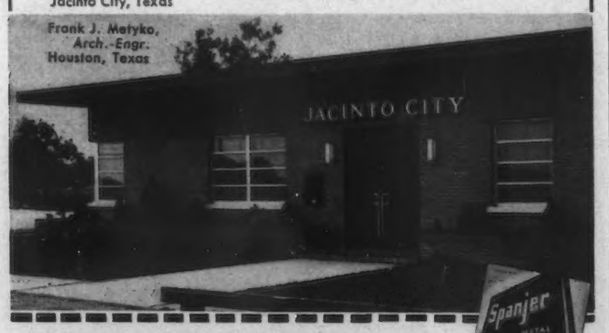
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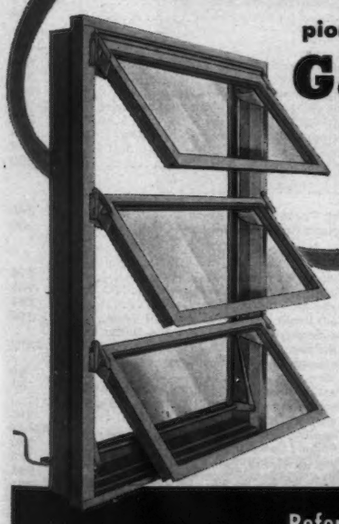
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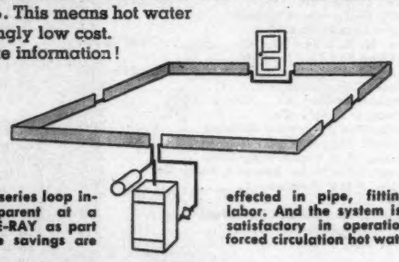
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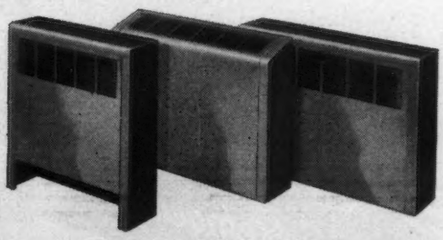
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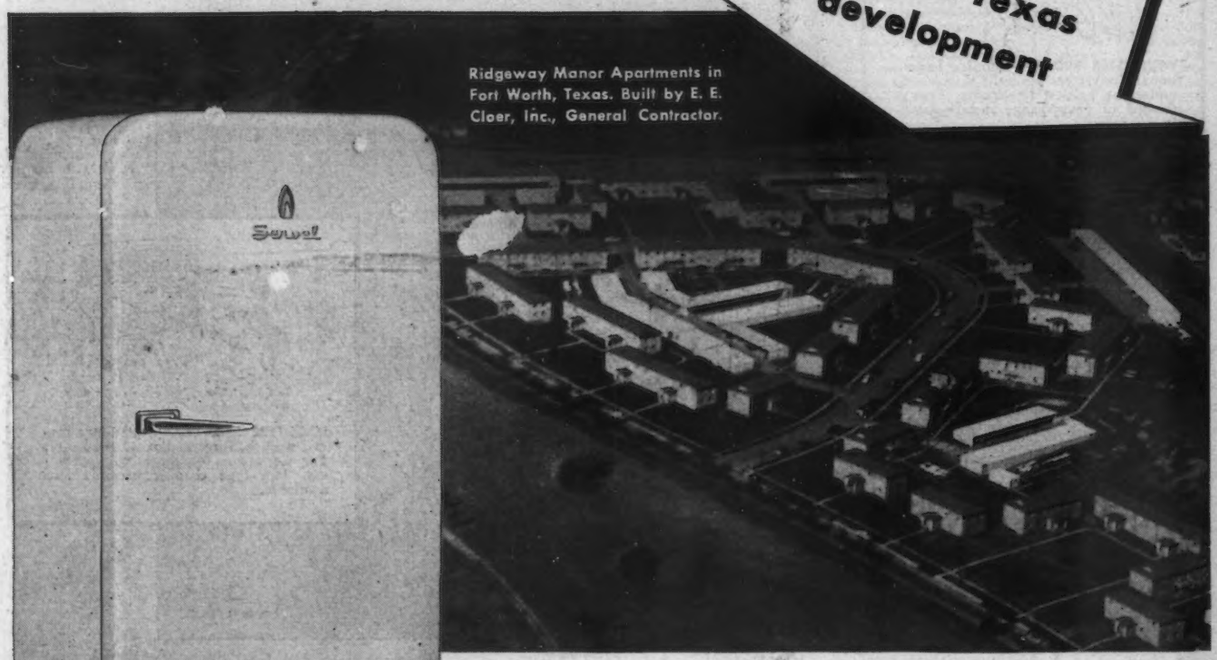




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